

Course Title	Course Description	Topic Area(s)	Target Audience	Market Sector (if applicable)	Type (Seminar, Certification, College Class, etc.)	Course Units and Type, if applicable	Offered By	Location	Cost	Available Now? If no, list start date:	Website, and/or additional info
Energy Auditing Fundamentals	This course will begin with the pre-audit work that needs to be done to make best use of the auditor's field time. We will then go through all the components of the site visit phase of the audit: covering who should be involved, data gathering and forensic detective techniques, and survey/monitoring tools. From there, analysis of the data and potential savings opportunities will be discussed, covering both energy and economic considerations. The proper application of applicable energy rates will be emphasized, and the software tools available to assist the auditor will be reviewed. Finally and importantly, the contents and organizational issues necessary for the energy audit report to effectively present the information to its various end users will be detailed.	Audits	This course is designed to educate not only those professionals conducting audits do so effectively, but to inform end users of what they should expect of an audit, and government/utility/service provider managers of what their auditors should be including/doing in the audits they provide for their clients.	Commercial	webinar	0.4 CEU/4PDH	Association of Energy Engineers	Internet	\$445 member/\$495 nonmember	Yes	<a href="http://www.aeecenter.org/realtime/EnergyAuditing/">http://www.aeecenter.org/realtime/EnergyAuditing/</a>
Certified Energy Auditor Preparatory Training Program	This seminar is designed to provide the specific training and background needed by professionals preparing to sit for AEE's Certified Energy Auditor (CEA®) exam. The course agenda also includes updates on topics of current importance to all individuals involved in performing facility energy audits.	Audits		Commercial; residential	webinar	1.2 CEU/12PDH	Association of Energy Engineers	Internet	\$995 member/\$1095 nonmember	Yes	<a href="http://www.aeecenter.org/realtime/CEAprep/">http://www.aeecenter.org/realtime/CEAprep/</a>
Fast Track CEM Preparatory Course for Energy Managers	This course will review the technical, economic and regulatory aspects of effective energy management, as well as the basics of energy efficiency improvement as it relates to electrical, utility, building and combustion systems. The essentials of performing an energy audit, as well as developing practical strategies for reducing energy costs will also be covered.	Audits	Designed for engineers with a minimum of 3 years' experience in energy efficiency, this program covers the full scope of subjects addressed on the CEM examination, including problem-solving techniques oriented toward typical problems you'll encounter on the exam.	Commercial	webinar	None	Association of Energy Engineers	Internet	\$995 member/\$1095 nonmember	Yes	<a href="http://www.aeecenter.org/realtime/FastTrackCEM/">http://www.aeecenter.org/realtime/FastTrackCEM/</a>
Load Profiling, Smart Metering and Demand Response	This seminar will show you how to use Excel® and "smart" meter data analysis to gain a clearer understanding of your electrical loads, and then utilize that information for both load control and demand response to cut energy costs.	Audits			webinar	None	Association of Energy Engineers	Internet	\$645 member/\$695 nonmember	Yes	<a href="http://www.aeecenter.org/realtime/LPonline/">http://www.aeecenter.org/realtime/LPonline/</a>
Pitfalls and Profits in Performance Contracting	This seminar is designed to provide comprehensive professional training in the effective use of performance contracting for energy projects, including how to avoid the types of problems which can seriously impair the success of potentially effective and profitable projects.	Building Performance		Commercial	webinar	1.2 CEU/12PDH	Association of Energy Engineers	Internet	\$845 member/\$895 nonmember	Yes	<a href="http://www.aeecenter.org/realtime/PConline/">http://www.aeecenter.org/realtime/PConline/</a>
Electrical Engineering Fundamentals for Non Electrical Engineers	This seminar is designed to provide professional training covering the essential aspects of electrical engineering principles and practices of greatest relevance and practical value to non-electrical engineers.	Electricity	This seminar is specifically designed for plant engineers, maintenance engineers, technicians, facilities managers and other facility professionals who would like to gain an understanding of the basic principles of electricity in a simple, easy to grasp format.	Commercial	webinar	0.8 CEU/8 PDH	Association of Energy Engineers	Internet	\$845 member/\$895 nonmember	Yes	<a href="http://www.aeecenter.org/realtime/EE/">http://www.aeecenter.org/realtime/EE/</a>
Fast Track BEP Certification	This seminar is designed to provide the specific training and background needed by professionals preparing to sit for AEE's Business Energy Professional (BEP®) certification examination. The course agenda also includes updates on topics of current importance to all individuals involved in the non-technical aspects of supervision and management of energy projects.	Energy Basics			webinar	None	Association of Energy Engineers	Internet	\$995 member/\$1095 nonmember	Yes	<a href="http://www.aeecenter.org/realtime/BEPprep/">http://www.aeecenter.org/realtime/BEPprep/</a>
Commercial HVAC Fundamentals: System Basics and Energy Efficiency Opportunities	This course is designed to give you the background you need to understand more fully how commercial HVAC systems operate, as well as what factors impact their overall performance.	HVAC	This seminar is designed for anyone who can benefit from a clearer understanding of the basics of commercial air conditioning and heating equipment, and a knowledge of specific, practical, easy-to-implement strategies for achieving optimum system performance and energy efficiency.	Commercial	webinar	0.8 CEU/8 PDH	Association of Energy Engineers	Internet	\$845 member/\$895 nonmember	Yes	<a href="http://www.aeecenter.org/realtime/HVAC/">http://www.aeecenter.org/realtime/HVAC/</a>
LEED and Intelligent Buildings Sustainable Green	This two-hour online seminar gives attendees a basic understanding of the key aspects of intelligent building technology, and how they can be used in a LEED® certification program.	LEED	This course assumes a fundamental understanding of LEED certification basics. This seminar is intended to provide a foundation of knowledge for those interested in learning more about LEED.		webinar	0.2 CEU/2 PDH	Association of Energy Engineers	Internet	\$245 member/\$295 nonmember	Yes	<a href="http://www.aeecenter.org/realtime/LEED-IB/">http://www.aeecenter.org/realtime/LEED-IB/</a>
Buildings: Introduction to LEED	This seminar provides a detailed introduction to the concepts and practices involved in development of sustainable green LEED® buildings, covering both new construction and existing structures.	LEED			webinar	0.6 CEU/6 PDH	Association of Energy Engineers	Internet	\$445 member/\$495 nonmember	Yes	<a href="http://www.aeecenter.org/realtime/LEED/">http://www.aeecenter.org/realtime/LEED/</a>
High Bay Lighting: Metal Halide vs. Fluorescent	This seminar is designed to show you step by step how to select the best, most effective lighting solution for a broad spectrum of high bay applications.	Lighting		Commercial	webinar	0.4 CEU/4PDH	Association of Energy Engineers	Internet	\$445 member/\$495 nonmember	Yes	<a href="http://www.aeecenter.org/realtime/HighBay/">http://www.aeecenter.org/realtime/HighBay/</a>
Dimming vs. Nondimming Ballasts	This seminar is designed bring together and systematically assess the factors critical to deciding whether dimming or non-dimming ballasts will be most appropriate and cost effective for specific daylight harvesting and peak load shedding lighting applications.	Lighting		Commercial	webinar	0.4 CEU/4PDH	Association of Energy Engineers	Internet	\$445 member/\$495 nonmember	Yes	<a href="http://www.aeecenter.org/realtime/ballasts/">http://www.aeecenter.org/realtime/ballasts/</a>
Advanced Technologies in Outdoor Lighting	This course is designed to bring you up to speed on the latest outdoor light source advances, their technical characteristics, their pros and cons, and what needs to be considered in making the right choice for a specific exterior lighting installation.	Lighting			webinar	0.4 CEU/4PDH	Association of Energy Engineers	Internet	\$445 member/\$495 nonmember	Yes	<a href="http://www.aeecenter.org/realtime/OutdoorLighting/">http://www.aeecenter.org/realtime/OutdoorLighting/</a>
Advanced Lighting Retrofit Options	This seminar is designed to provide professional training covering the latest trends and advances now being used to optimize the performance of commercial, institutional and industrial lighting systems.	Lighting		Commercial	webinar	None	Association of Energy Engineers	Internet	\$845 member/\$895 nonmember	Yes	<a href="http://www.aeecenter.org/realtime/AdvancedLighting/">http://www.aeecenter.org/realtime/AdvancedLighting/</a>

LED Lighting: Is It Ready for Prime Time?	This seminar is designed to educate you about both the best types of applications for utilizing current LED lighting technologies, as well as about their limitations for certain types of settings.	Lighting		webinar	None	Association of Energy Engineers	Internet	\$445 member/\$495 nonmember	Yes	<a href="http://www.aeecenter.org/realtime/LED/">http://www.aeecenter.org/realtime/LED/</a>	
Motors: Operations, Efficiency and Economics	This seminar is designed to provide comprehensive professional training in the use of tested and proven strategies for improving electric motor efficiency and performance, for the purpose of reducing motor-related energy costs.	Motors		webinar	0.8 CEU/8 PDH	Association of Energy Engineers	Internet	\$845 member/\$895 nonmember	Yes	<a href="http://www.aeecenter.org/realtime/motors/">http://www.aeecenter.org/realtime/motors/</a>	
Working Green: Sustainable Energy Planning Workshop	This seminar will help you develop a systematic, process-driven approach to your energy program -- one that integrates a sustainable, green energy plan into your organization's overall business objectives, achieving results which will significantly improve economic performance.	Planning	energy managers, plant managers and energy team leaders, as well as for finance directors and operations managers	Commercial	webinar	0.6 CEU/6 PDH	Association of Energy Engineers	Internet	\$645 member/\$695 nonmember	Yes	<a href="http://www.aeecenter.org/realtime/sep/">http://www.aeecenter.org/realtime/sep/</a>
Buying Power in Competitive Retail Markets	This seminar is specifically designed to train facility managers, building owners, and their consultants to buy retail electric power for facilities in deregulated markets. Learn how to go about planning, designing and implementing cogeneration and on-site power projects, both to insure your own power supply, and potentially as a player in the growing distributed generation marketplace. You'll be given the technical, financial and legal expertise you need to evaluate your options and maximize the return on your investment.	Purchasing	Procurement managers		webinar	0.6 CEU/6 PDH	Association of Energy Engineers	Internet	\$645 member/\$695 nonmember	Yes	<a href="http://www.aeecenter.org/realtime/PowerPurchasing/">http://www.aeecenter.org/realtime/PowerPurchasing/</a>
Small Scale Cogeneration					webinar	0.6 CEU/6 PDH	Association of Energy Engineers	Internet	\$645 member/\$695 nonmember	Yes	<a href="http://www.aeecenter.org/realtime/cogen/">http://www.aeecenter.org/realtime/cogen/</a>
Compressed Air Basics and Energy Efficiency	This seminar examines all major aspects of compressed air systems and their application in commercial and industrial facilities, including opportunities to improve their performance and energy efficiency. This seminar is designed to show you the specifics of how to slash energy costs, pollution and carbon emissions in thermal plants. This important program presents a systematic approach to uncovering and correcting unnecessary boiler energy losses, while simultaneously reducing carbon emissions and pollution.			Commercial	webinar	0.8 CEU/8 PDH	Association of Energy Engineers	Internet	\$845 member/\$895 nonmember	Yes	<a href="http://www.aeecenter.org/realtime/CompressedAir/">http://www.aeecenter.org/realtime/CompressedAir/</a>
Optimizing Boiler Efficiency	This important program presents an analysis of how to uncover and correct unnecessary steam system energy losses, and reduce unnecessary carbon emissions and pollution. It also has special sections on waste heat recovery and measuring combustion products.			Commercial	webinar	0.8 CEU/8 PDH	Association of Energy Engineers	Internet	\$845 member/\$895 nonmember	Yes	<a href="http://www.aeecenter.org/realtime/boilers/">http://www.aeecenter.org/realtime/boilers/</a>
Optimizing Steam Systems	This seminar is designed to provide the specific training and background needed by professionals preparing to sit for AEE's Certified Sustainable Development Professional (CSDP®) exam. The course agenda also includes updates on topics of current importance to all individuals involved in all types of sustainable development projects.					0.8 CEU/8 PDH	Association of Energy Engineers	Internet	\$845 member/\$895 nonmember	Yes	<a href="http://www.aeecenter.org/realtime/steam/">http://www.aeecenter.org/realtime/steam/</a>
Fundamentals of Sustainable Development and Carbon Reduction			LKM Certification is designed for professionals with a four-year degree in engineering, architecture, business or related field of study, OR the current status of Certified Energy Manager (CEM) in good standing.	Commercial; residential	webinar	1.0 CEU.10 PDH	Association of Energy Engineers	Internet	\$895 member/\$995 nonmember	Yes	<a href="http://www.aeecenter.org/realtime/CSDPprep/">http://www.aeecenter.org/realtime/CSDPprep/</a>
Fast Track CRM Preparatory Course for Carbon Reduction Managers	This seminar is designed to provide the specific training and background needed by professionals preparing to sit for AEE's Certified Carbon Reduction Manager (CRM®) exam. The course agenda also includes updates on topics of current importance to all individuals involved in the management of carbon emissions.			Commercial	webinar	1.2 CEU/12PDH	Association of Energy Engineers	Internet	\$995 member/\$1095 nonmember	Yes	<a href="http://www.aeecenter.org/realtime/CRMprep/">http://www.aeecenter.org/realtime/CRMprep/</a>
Developing an Energy Management Master Plan	This seminar covers all aspects of creating and implementing a successful, cost-reducing energy management program for any size or type of organization		This course is designed to provide energy managers, senior corporate management, engineers, plant managers, and those who service the energy needs of an organization with the tools to design and implement a successful EMP and cut the impact of energy costs on their bottom line.	Commercial	webinar	None	Association of Energy Engineers	Internet	\$645 member/\$695 nonmember	Yes	<a href="http://www.aeecenter.org/realtime/EMP/">http://www.aeecenter.org/realtime/EMP/</a>
Boiler and Steam Cost Control	This seminar is designed to introduce you to the broad range of fuel saving options hidden away in boiler and steam systems, including over 100 ways to slash energy costs, pollution and carbon emissions.			Commercial	webinar	None	Association of Energy Engineers	Internet	\$845 member/\$895 nonmember	Yes	<a href="http://www.aeecenter.org/realtime/100ways/">http://www.aeecenter.org/realtime/100ways/</a>
Energy Cost Control: How the Money Works	This two-hour online seminar provides strategies for building organization-wide consensus support for energy improvements.		energy managers, plant managers and energy team leaders, as well as for finance directors and operations managers	Commercial	webinar	None	Association of Energy Engineers	Internet	\$245 member/\$295 nonmember	Yes	<a href="http://www.aeecenter.org/realtime/CostControl/">http://www.aeecenter.org/realtime/CostControl/</a>
Certified Green Building Professional Training (CGBP)	Training participants attend a two-day, 16-hour course based on the overarching principles of green building and the systems approach to the design, construction and operation of buildings. The course is followed by a written exam. Expert instructors and guest speakers provide in-depth presentations on green building topics and green business marketing. Typical course content is outlined below: Energy (conservation, efficiency, and renewable energy as it applies to framing, insulation, windows, water heating, appliances, heating/cooling and lighting); Resource Conservation (jobsite waste/recycling, landscaping, water conservation, efficient framing, durability, and materials choices); Indoor Air Quality (VOCs, finish materials, ventilation, filtration, mold, and IAQ construction practices); Developing and Marketing a Green Business (consumer preferences, marketing tools, effective language, and green business case studies); Final Exam	Green building, design, construction, operation		Seminar; Certification	None	Build It Green	Various	\$400 member/\$450 nonmember	Yes	<a href="http://www.builditgreen.org/training-workshops-events">http://www.builditgreen.org/training-workshops-events</a>	
Energy Star Training	Energy Star offers a variety of online training resources and materials to help sales people and contractors explain the benefits of Energy Star rated and energy efficient appliances, buildings, systems, etc. Find tools and information to help you convey to your staff, customers, or business partners how ENERGY STAR can help them protect the environment while saving energy and money.	Appliances; buildings	This information is designed to serve as a resource for partners looking to improve their sales effectiveness.	Commercial; residential	webinar; training materials	None	Energy Star	Internet	No cost	Yes	<a href="http://www.energystar.gov/index.cfm?c=pt_univ.pt_univ">http://www.energystar.gov/index.cfm?c=pt_univ.pt_univ</a>

PV Design Online	Learn how to design a complete solar electric (photovoltaic) power system without leaving your home. This six-week, Internet-based, online course includes the same topics as our face-to-face PV workshops, without the hands-on component. Combine this course with PV Lab Week for more hands-on experience.	Solar	This course is for anyone who is interested in learning how to produce their own electricity from the sun. The course will be useful to people seeking employment in the solar energy industry as well as for those seeking to apply solar electricity for their own home.	Commercial; residential	workshop series	Credit available	Solar Energy International	Internet		\$795	Yes	<a href="http://www.solarenergy.org/workshops/pvdesignonline.html">http://www.solarenergy.org/workshops/pvdesignonline.html</a>
Advanced PV Online	This six-week online course covers the same material as our face-to-face Advanced PV workshops. It is designed to follow the PV Design & Installation workshop or the PV Design Online course with the next level of design criteria, maintenance issues and troubleshooting skills, with a special focus on compliance with the National Electric Code.	Solar	This course is for anyone who is interested in learning how to produce their own electricity from the sun. The course will be useful to people seeking employment in the solar energy industry as well as for those seeking to apply solar electricity for their own home.	Commercial; residential	workshop series	Credit available	Solar Energy International	Internet		\$795	Yes	<a href="http://www.solarenergy.org/workshops/advpvonline.html">http://www.solarenergy.org/workshops/advpvonline.html</a>
Building for the Future: Sustainable Home Design ONLINE	Similar to the face-to-face workshop, this six-week, self-paced online course is for anyone interested in modern sustainable construction. This course covers the principles behind designing and building residential structures that achieve optimal year-round comfort, reduce energy consumption, improve indoor air quality and limit environmental impact. Participants will be able to identify a range of solutions that will result in a sustainable and comfortable home. The online sessions include more case studies of successful sustainable homes, the Building with Awareness DVD, the book Your Green Home, industry related hand-outs and a wealth of Internet resource links. Students can also earn college credit for all online courses through Madison Area Technical College.		Whether you're building your own house or simply want to talk knowledgeably with those who will build it for you, these workshops will help you understand the home design principles that make use of both new and centuries old methods and materials for sustainable living. These workshops are also suitable as a prerequisite for those interested in becoming professionals in the field of sustainable design and for those design professionals interested in capably meeting their clients' demand for sustainable design.	Residential	workshop series	Credit available	Solar Energy International	Internet		\$695	Yes	<a href="http://www.solarenergy.org/workshops/sushomedesonline.html">http://www.solarenergy.org/workshops/sushomedesonline.html</a>
Renewable Energy for the Developing World: Project Design and Implementation	This workshop explores what it takes to successfully accomplish sustainable development projects with renewable energy technologies in the developing world. Participants will learn about effective technology transfer methods and the social & cultural issues of working in the developing world, as well as setting up infrastructure and the economics and financing of renewable energy projects. Case studies will be presented by guest speakers from around the world on solar cooking, rural household electrification, rural health care, and micro-enterprises using renewable energy.			Commercial; residential	workshop series	Credit available	Solar Energy International	Internet		\$745	Yes	<a href="http://www.solarenergy.org/workshops/redw.html">http://www.solarenergy.org/workshops/redw.html</a>
REGREEN & Deep Energy Retrofit	Various courses for professionals and homeowners interested in learning about solar and renewable energy. In this final session of our three part series, we will explore the key elements in maximizing a home's energy efficiency. We will learn how to accomplish home energy reductions of 50-90% through conducting a home performance audit and addressing all energy loads within the home and the condition of the building envelope.	Building Envelope		Commercial; residential	workshop	None	Solar Living Institute	Varies	Varies		Yes	<a href="http://solarliving.org/workshops/2008_workshop%20schedule4website.pdf">http://solarliving.org/workshops/2008_workshop%20schedule4website.pdf</a>
Succeed at LEED Workshop	In this final session of our three part series, we will explore the key elements in maximizing a home's energy efficiency. We will learn how to accomplish home energy reductions of 50-90% through conducting a home performance audit and addressing all energy loads within the home and the condition of the building envelope.	Building Envelope	Sustainable design and construction professionals; homeowners	Residential	webinar	None	US Green Building Council	Internet	\$60 member/\$80 nonmember		Yes	<a href="https://www.globallearningsystems.com/usgbc/webinars/register.php?id=4">https://www.globallearningsystems.com/usgbc/webinars/register.php?id=4</a>
LEED for Commercial Interiors v2.0 Exam Prep	Succeed at LEED is an advanced LEED process workshop. In this workshop, we teach participants how to manage a LEED program for a project from first client meeting to final certification. In essence, we teach people how we do what we do, including giving away templates for many of our tools and internal systems. This workshop requires basic LEED knowledge; it does not cover the content of credits and prerequisites. It does cover strategies for achieving the credits in typical and unusual situations, and draws extensively from our experience on well over 100 LEED projects.	Building Performance			workshop	None	US Green Building Council	Oakland - StopWaste	\$245 member/\$295 nonmember		Yes	<a href="http://www.usgbc-ncc.org/index.php?option=com_events&amp;type=event&amp;task=details&amp;id=685">http://www.usgbc-ncc.org/index.php?option=com_events&amp;type=event&amp;task=details&amp;id=685</a>
LEED for New Construction v2.2 Exam Prep		Building Performance	Participants should be enrolled for LEED exam		workshop	None	US Green Building Council	San Francisco - USGBC	\$295 member/\$345 nonmember		Yes	<a href="http://www.usgbc-ncc.org/index.php?option=com_events&amp;type=event&amp;task=details&amp;id=717">http://www.usgbc-ncc.org/index.php?option=com_events&amp;type=event&amp;task=details&amp;id=717</a>
LEED Core Concepts and Strategies	Our LEED Core Concepts and Strategies workshop provides essential knowledge of the LEED Rating Systems and sustainable building concepts for those seeking a better understanding of LEED or pursuing GBCI's LEED Green Associate (Tier I) credential. By presenting LEED concepts at the credit category level – across building types and rating systems – and basics on the building certification process, this workshop provides the foundation required for any 300-level LEED education offering. Real project examples help demonstrate and reinforce learning. Recommended Prior Knowledge: Familiarity with USGBC and LEED, or USGBC's "Green Building Basics and LEED" instructor-led workshop or online program.	Building Performance	Participants should be enrolled for LEED exam		workshop	None	US Green Building Council	San Francisco - USGBC	\$375 member/\$495nonmember		Yes	<a href="http://www.usgbc.org/Workshops/Workshoplist.aspx">http://www.usgbc.org/Workshops/Workshoplist.aspx</a>
LEED Exam v2.2 Prep	The USGBC Northern California Chapter, in partnership with GreenStep Education, is offering a full-day LEED NCv2.2 Exam Preparation Workshop designed to prepare you pass the test with confidence - the first time. In addition to delivering the material in a clear and concise format, this workshop presents the types of questions that are asked on the exam so you know what and how to study. We review example scenarios from real world projects to help you better understand and remember the material while giving you an opportunity to put the concepts to practice.	Building Performance	Participants should be enrolled for LEED exam		workshop	None	US Green Building Council	Sacramento - SMUD Milpitas - XL Construction San Francisco - PEC	\$295 member/\$345 nonmember		Yes	<a href="http://www.usgbc-ncc.org/index.php?option=com_events&amp;type=event&amp;task=details&amp;id=724">http://www.usgbc-ncc.org/index.php?option=com_events&amp;type=event&amp;task=details&amp;id=724</a>

LEED 101: Certification & Market Overview for Brokers	<p>in order to fulfill tenant needs and successfully negotiate leases, brokers must understand the differences between the various LEED certification systems as well as an understanding of how and why LEED has permeated the marketplace. This session will focus on the different certification systems used by the USGBC and how they differ in uses and in benefits, followed by an overview of the presence of LEED in the commercial buildings marketplace and the factors that have driven its adoption. The webinar will illustrate how varying tenant needs can be met by the different types of certified projects that exist in the marketplace.</p> <p>Successful brokers are always focused on the needs of their clients. Landlord representatives must master the art of marketing a LEED certified building; whereas tenant representatives are challenged to guide their clients through the decision making process that places tenants in the most appropriate space. This webinar session will provide real world examples from all sides of the transaction on finding suitable LEED certified spaces that meet tenants needs, and the reasoning behind demand for green space.</p>	Building Performance	building owners, brokers, operators and maintenance professionals involved in implementing the LEED for existing buildings	Commercial	webinar	None	US Green Building Council	Internet	\$60 member/\$80 nonmember	Yes	<a href="https://www.globallearningsystems.com/usgbc/webinars/register.php?id=7">https://www.globallearningsystems.com/usgbc/webinars/register.php?id=7</a>
Meeting Tenant Demands for LEED		Building Performance	building owners, brokers, operators and maintenance professionals involved in implementing the LEED for existing buildings	Commercial	webinar	None	US Green Building Council	Internet	\$60 member/\$80 nonmember	Yes	<a href="https://www.globallearningsystems.com/usgbc/webinars/register.php?id=7">https://www.globallearningsystems.com/usgbc/webinars/register.php?id=7</a>
Case Study: Challenges and Opportunities in Negotiating a Green Transaction	This session will include examples of the leasing process for a LEED certified space, broker responses to issues, and things to look for in the negotiation. Brokers will learn how leasing LEED certified space can drive new business opportunities and revenue.	Building Performance	building owners, brokers, operators and maintenance professionals involved in implementing the LEED for existing buildings	Commercial	webinar	None	US Green Building Council	Internet	\$60 member/\$80 nonmember	Yes	<a href="https://www.globallearningsystems.com/usgbc/webinars/register.php?id=7">https://www.globallearningsystems.com/usgbc/webinars/register.php?id=7</a>
An Introduction to LEED for Retail 2009	This webinar will provide an overview of LEED for Retail, the reasons for which it was created, and real world experience from a retail pilot participant. LEED for Retail has existed for over two years as a pilot program at the USGBC. During this time, pilot projects of all types helped shape LEED for Retail 2009 through innovative approaches to retail specific issues such as process energy usage, lighting, transportation, and waste reduction. Panelists will present their specific project experiences including lessons learned, designs implemented, and best practices for achieving success.	Building Performance	Sustainable design and construction professionals	Commercial	webinar	None	US Green Building Council	Internet	\$60 member/\$80 nonmember	Yes	<a href="https://www.globallearningsystems.com/usgbc/webinars/register.php?id=6">https://www.globallearningsystems.com/usgbc/webinars/register.php?id=6</a>
LEED for Retail in Action: Case Studies from Early Adopters	Slated to launch in Q3 2009, the volume certification provides a cost-effective path to achieving LEED certification on a volume scale. The program also assists participants in integrating green building design, construction, and operations into their standard business practices using LEED technical standards and guidance. This webinar will provide an overview of the program as well as real world examples from pilot participants.	Building Performance		Commercial	webinar	None	US Green Building Council	Internet	\$60 member/\$80 nonmember	Yes	<a href="https://www.globallearningsystems.com/usgbc/webinars/register.php?id=6">https://www.globallearningsystems.com/usgbc/webinars/register.php?id=6</a>
Volume Certification for Retailers		Building Performance	Sustainable design and construction professionals	Commercial	webinar	None	US Green Building Council	Internet	\$60 member/\$80 nonmember	Yes	<a href="https://www.globallearningsystems.com/usgbc/webinars/register.php?id=6">https://www.globallearningsystems.com/usgbc/webinars/register.php?id=6</a>
LEED for Existing Buildings: Operations & Maintenance Webinar Series, Session 1	Upon completion, participants will be able to: Explain key credit concepts from the LEED for Existing Buildings: Operations & Maintenance Certification System. Describe why existing buildings are prime opportunities for reducing carbon emissions and energy use. Recognize strategies for improving building operations and maintenance using LEED.		This webinar series is a valuable opportunity for building owners; building operators and property, facility and maintenance managers; real estate and investment professionals; purchasing, waste management and recycling program managers; LEED APs; educators and students; and anyone else interested in improving the operational efficiency of an existing building.		webinar	1 CEU hour per session	US Green Building Council	Internet	\$80 session/\$275 series	Yes	<a href="http://www.usgbc.org/DisplayPage.aspx?CMSPageID=1856">http://www.usgbc.org/DisplayPage.aspx?CMSPageID=1856</a>
LEED for Existing Buildings: Operations & Maintenance Webinar Series, Session 2	Upon completion, participants will be able to: Explain the key LEED credit intents pertaining to energy use and indoor air quality. Describe the benefits of retro commissioning. Identify EPA's ENERGY STAR requirements. Explain requirements of ASHRAE 62 compliance. Discuss how projects have used LEED for Existing Buildings: Operations & Maintenance to achieve their bottom-line goals.		This webinar series is a valuable opportunity for building owners; building operators and property, facility and maintenance managers; real estate and investment professionals; purchasing, waste management and recycling program managers; LEED APs; educators and students; and anyone else interested in improving the operational efficiency of an existing building.		webinar	1 CEU hour per session	US Green Building Council	Internet	\$80 session/\$275 series	Yes	<a href="http://www.usgbc.org/DisplayPage.aspx?CMSPageID=1856">http://www.usgbc.org/DisplayPage.aspx?CMSPageID=1856</a>
LEED for Existing Buildings: Operations & Maintenance Webinar Series, Session 3	Upon completion, participants will be able to: Explain the key LEED credit intents and identify best practices pertaining to procurement, waste management and green cleaning. Recognize innovative recycling and waste stream management strategies. Discuss how projects have used LEED for Existing Buildings: Operations & Maintenance to achieve their bottom-line goals.		This webinar series is a valuable opportunity for building owners; building operators and property, facility and maintenance managers; real estate and investment professionals; purchasing, waste management and recycling program managers; LEED APs; educators and students; and anyone else interested in improving the operational efficiency of an existing building.		webinar	1 CEU hour per session	US Green Building Council	Internet	\$80 session/\$275 series	Yes	<a href="http://www.usgbc.org/DisplayPage.aspx?CMSPageID=1856">http://www.usgbc.org/DisplayPage.aspx?CMSPageID=1856</a>

LEED for Existing Buildings: Operations & Maintenance Webinar Series, Session 4 Case Studies: Water Efficiency & Transportation	Upon completion, participants will be able to: Explain the key LEED credit intents and identify best practices pertaining to efficient water usage. Recognize alternative transportation strategies for reducing energy consumption. Discuss how projects have used LEED for Existing Buildings: Operations & Maintenance to achieve their bottom-line goals.	This webinar series is a valuable opportunity for building owners; building operators and property, facility and maintenance managers; real estate and investment professionals; purchasing, waste management and recycling program managers; LEED APs; educators and students; and anyone else interested in improving the operational efficiency of an existing building.	Commercial	webinar	1 CEU hour per session	US Green Building Council	Internet	\$80 session/\$275 series	Yes	<a href="http://www.usgbc.org/DisplayPage.aspx?CMSPageID=1856">http://www.usgbc.org/DisplayPage.aspx?CMSPageID=1856</a>
LEED for Homes Webinar Series Session 1, LEED for Homes 101	Learn how certification recognizes and rewards builders for meeting the highest performance standards, while giving homeowners confidence that their homes are durable, healthy, and environmentally friendly.	This webinar series will benefit building industry professionals, real estate professionals, product manufacturers, and others interested in learning about the new LEED for Homes Rating System.	Residential	webinar	1 CEU hour per session	US Green Building Council	Internet	\$39/session	Yes	<a href="http://www.usgbc.org/DisplayPage.aspx?CMSPageID=1809">http://www.usgbc.org/DisplayPage.aspx?CMSPageID=1809</a>
LEED for Homes Webinar Series Session 2, Case Studies	Builders who are using the LEED for Homes Rating System will share strategies, challenges, and lessons learned. Several different types of projects will be featured.	This webinar series will benefit building industry professionals, real estate professionals, product manufacturers, and others interested in learning about the new LEED for Homes Rating System.	Residential	webinar	1 CEU hour per session	US Green Building Council	Internet	\$39/session	Yes	<a href="http://www.usgbc.org/DisplayPage.aspx?CMSPageID=1809">http://www.usgbc.org/DisplayPage.aspx?CMSPageID=1809</a>
LEED for Homes Webinar Series Session 3, The Delivery Process	Learn how design professionals, builders and LEED for Homes Providers are currently delivering LEED for Homes projects. Hear from two current Homes Providers from different parts of the country on how the program works in their regional markets and next steps for those interested in getting started.	This webinar series will benefit building industry professionals, real estate professionals, product manufacturers, and others interested in learning about the new LEED for Homes Rating System.	Residential	webinar	1 CEU hour per session	US Green Building Council	Internet	\$39/session	Yes	<a href="http://www.usgbc.org/DisplayPage.aspx?CMSPageID=1809">http://www.usgbc.org/DisplayPage.aspx?CMSPageID=1809</a>
Carbon Reduction, Foundations Session 1: Climate Change 101	Upon completion, participants will be able to: Define climate change and its scientific impacts. Assess the new urgency of addressing climate change. Describe the relative impacts of individuals, organizations, communities, and buildings on climate. Recognize your power to reduce the carbon footprint of your own building projects or organization.	Building industry professionals, business and organizational leaders, and anyone else interested in reducing the carbon footprint of their building projects or organization.	Commercial	webinar	1 CEU hour per session	US Green Building Council	Internet	\$80 session/\$125 series	Yes	<a href="http://www.usgbc.org/DisplayPage.aspx?CMSPageID=1705#14">http://www.usgbc.org/DisplayPage.aspx?CMSPageID=1705#14</a>
Carbon Reduction, Foundations Session 2: Carbon Inventory Process	Upon completion, participants will be able to: Understand the importance of developing a carbon baseline. Use carbon calculators. Identify key emissions contributors. Employ the Plan/Develop/Manage model to create a carbon baseline/inventory.	Building industry professionals, business and organizational leaders, and anyone else interested in reducing the carbon footprint of their building projects or organization.	Commercial	webinar	1 CEU hour per session	US Green Building Council	Internet	\$80 session/\$125 series	Yes	<a href="http://www.usgbc.org/DisplayPage.aspx?CMSPageID=1705#14">http://www.usgbc.org/DisplayPage.aspx?CMSPageID=1705#14</a>
Carbon Reduction, Building Projects I: New Construction & Neighborhoods	Upon completion, participants will be able to: identify the top contributors to carbon emissions in new buildings and neighborhoods, implement strategies for building systems, transportation, and water to lower carbon emissions, describe the benefits of implementing these systems	Building industry professionals, business and organizational leaders, and anyone else interested in reducing the carbon footprint of their building projects or organization.	Commercial; residential	webinar	1 CEU hour per session	US Green Building Council	Internet	\$80 session/\$200 series	Yes	<a href="http://www.usgbc.org/DisplayPage.aspx?CMSPageID=1705#14">http://www.usgbc.org/DisplayPage.aspx?CMSPageID=1705#14</a>
Carbon Reduction, Building Projects II: Existing Buildings & Building Portfolios	Upon completion, participants will be able to: identify the top contributors to carbon emissions in existing buildings, and across building portfolios, implement strategies to reduce waste, energy, and water use to lower carbon emissions, describe the benefits of implementing these systems	Building industry professionals, business and organizational leaders, and anyone else interested in reducing the carbon footprint of their building projects or organization.	Commercial; residential	webinar	1 CEU hour per session	US Green Building Council	Internet	\$80 session/\$200 series	Yes	<a href="http://www.usgbc.org/DisplayPage.aspx?CMSPageID=1705#14">http://www.usgbc.org/DisplayPage.aspx?CMSPageID=1705#14</a>
Carbon Reduction, Building Projects III: Commercial Interiors & Core and Shell	Upon completion, participants will be able to: identify the top contributors to carbon emissions in commercial interiors and core and shell construction projects, implement strategies to lower carbon emissions, describe the benefits of implementing these systems	Building industry professionals, business and organizational leaders, and anyone else interested in reducing the carbon footprint of their building projects or organization.	Commercial; residential	webinar	1 CEU hour per session	US Green Building Council	Internet	\$80 session/\$200 series	Yes	<a href="http://www.usgbc.org/DisplayPage.aspx?CMSPageID=1705#14">http://www.usgbc.org/DisplayPage.aspx?CMSPageID=1705#14</a>
Carbon Reduction, Organizations I: Corporate Climate Strategy Overview	Upon completion, participants will be able to: identify the main sources of carbon emissions in organizations, understand key factors in developing a corporate climate strategy, describe the initial steps for implementing a carbon reduction plan	Building industry professionals, business and organizational leaders, and anyone else interested in reducing the carbon footprint of their building projects or organization.	Commercial	webinar	1 CEU hour per session	US Green Building Council	Internet	\$80 session/\$200 series	Yes	<a href="http://www.usgbc.org/DisplayPage.aspx?CMSPageID=1705#14">http://www.usgbc.org/DisplayPage.aspx?CMSPageID=1705#14</a>
Carbon Reduction, Organizations II: Internal Influences on Corporate Climate Strategy	Upon completion, participants will be able to: engage internal stakeholders and organize a cross-functional climate strategy workgroup, communicate a strong business case to upper management for incorporating climate change into core business strategies, develop aggressive, but achievable, greenhouse gas reduction goals	Building industry professionals, business and organizational leaders, and anyone else interested in reducing the carbon footprint of their building projects or organization.	Commercial	webinar	1 CEU hour per session	US Green Building Council	Internet	\$80 session/\$200 series	Yes	<a href="http://www.usgbc.org/DisplayPage.aspx?CMSPageID=1705#14">http://www.usgbc.org/DisplayPage.aspx?CMSPageID=1705#14</a>
Carbon Reduction, Organizations III: External Influences on Corporate Climate Strategy	Upon completion, participants will be able to: understand the importance of climate policy engagement and technology developments, engage key external stakeholders in climate goals and initiatives, collaborate with business partners up and down the supply chain to reduce greenhouse gas emissions This is your chance to learn how to incorporate the REGREEN, the green residential remodeling guidelines, into your next home renovation project. We will walk you through the history, intent and content of the REGREEN guidelines as well as share information on the future of the program. You will also learn what educational opportunities are provided around the REGREEN program through USGBC and ASID where to go for more resources.	Building industry professionals, business and organizational leaders, and anyone else interested in reducing the carbon footprint of their building projects or organization.	Commercial	webinar	1 CEU hour per session	US Green Building Council	Internet	\$80 session/\$200 series	Yes	<a href="http://www.usgbc.org/DisplayPage.aspx?CMSPageID=1705#14">http://www.usgbc.org/DisplayPage.aspx?CMSPageID=1705#14</a>
Introduction to the REGREEN Program		Sustainable design and construction professionals; homeowners	Residential	webinar	None	US Green Building Council	Internet	\$60 member/\$80 nonmember	Yes	<a href="https://www.globalearningsystems.com/usgbc/webinars/register.php?id=4">https://www.globalearningsystems.com/usgbc/webinars/register.php?id=4</a>

REGREEN Your Kitchen & Bath	This session will help you to actually begin to incorporate greening into your remodeling projects. You will understand the key elements in greening a kitchen and bath renovation. Through descriptive case studies, we will describe specific strategies and show you how they are implemented. We will highlight specific solutions that make good economic and environmental sense while adding beauty, functionality, and durability to your kitchen and bath spaces.		Sustainable design and construction professionals; homeowners	Residential	webinar	None	US Green Building Council	Internet	\$60 member/\$80 nonmember	Yes	<a href="https://www.globallearningsystems.com/usgbc/webinars/register.php?id=4">https://www.globallearningsystems.com/usgbc/webinars/register.php?id=4</a>
Top 10 No-Cost Ways to Lower Your School's Utility Bills	This webinar will present the top ten no-cost ways to lower your school district's energy bill throughout the year. Find out how you can improve the energy performance of your school facilities by up to 10% without spending a dime.		This webinar series is a valuable opportunity for school facilities managers and staff, school operations staff, and anyone else interested in improving the operational efficiency of K-12 facilities.		webinar	None	US Green Building Council	Internet	No cost	Yes	<a href="http://www.usgbc.org/DisplayPage.aspx?CMSPageID=1898">http://www.usgbc.org/DisplayPage.aspx?CMSPageID=1898</a>
Top 10 Low-Cost Ways to Lower Your School's Utility Bills	By improving the energy efficiency of our schools, districts can cut costs without cutting corners. This webinar will introduce the top ten ways to lower your school district's energy bill by using low-cost measures. Find out how you can improve the energy efficiency of your school facilities by up to 15% within existing budget resources.		This webinar series is a valuable opportunity for school facilities managers and staff, school operations staff, and anyone else interested in improving the operational efficiency of K-12 facilities.		webinar	None	US Green Building Council	Internet	\$10 members/\$15 nonmembers	Yes	<a href="http://www.usgbc.org/DisplayPage.aspx?CMSPageID=1898">http://www.usgbc.org/DisplayPage.aspx?CMSPageID=1898</a>
Top 10 Investments to Lower Your School's Utility Bills	This webinar will introduce the top ten investments in efficiency measures that yield the fastest payback when it comes to significantly improving the energy performance of your school facilities. Find out how you can reduce the energy consumption of your school facilities by as much as 20%.		This webinar series is a valuable opportunity for school facilities managers and staff, school operations staff, and anyone else interested in improving the operational efficiency of K-12 facilities.		webinar	None	US Green Building Council	Internet	\$10 members/\$15 nonmembers	Yes	<a href="http://www.usgbc.org/DisplayPage.aspx?CMSPageID=1898">http://www.usgbc.org/DisplayPage.aspx?CMSPageID=1898</a>
Implementing State & Local Green Building Programs STAR: A Roadmap to Sustainable Communities	This webinar will feature government officials who have crafted effective programs. USGBC along with the National Association of State Facilities Administrators (NASFA) has created a State Implementation Toolkit that offers sample training, RFPs and other examples of effective green building programs.		Government officials; policy directors		webinar	None	US Green Building Council	Internet	\$60 member/\$80 nonmember	Yes	<a href="https://www.globallearningsystems.com/usgbc/webinars/register.php?id=1">https://www.globallearningsystems.com/usgbc/webinars/register.php?id=1</a>
	Learn about the STAR Community Index, a national framework to assist local governments as they plan, measure, and monitor progress toward sustainability over time.		Government officials; policy directors		webinar	None	US Green Building Council	Internet	\$60 member/\$80 nonmember	Yes	<a href="https://www.globallearningsystems.com/usgbc/webinars/register.php?id=1">https://www.globallearningsystems.com/usgbc/webinars/register.php?id=1</a>
Leadership in Green Building Policy	State and local policy makers will share their stories of crafting effective green policies. Resources such as the Green Playbook (www.greenplaybook.org) will be discussed.		Government officials; policy directors		webinar	None	US Green Building Council	Internet	\$60 member/\$80 nonmember	Yes	<a href="https://www.globallearningsystems.com/usgbc/webinars/register.php?id=1">https://www.globallearningsystems.com/usgbc/webinars/register.php?id=1</a>
Elements of Green Leases	This webinar will prepare you to create, communicate and enforce your own green lease, and will introduce you to BOMA's newest publication, Guide to Writing a Commercial Real Estate Lease, Including Green Lease Language.		Property managers	Commercial	webinar	None	US Green Building Council	Internet	\$125 member/\$175 nonmember	Yes	<a href="http://www.usgbc.org/DisplayPage.aspx?CMSPageID=1882">http://www.usgbc.org/DisplayPage.aspx?CMSPageID=1882</a>
Title-24 HERS Rater 2008 Update Certification for 2005 Certified Raters	All CalCERTS Raters currently certified for the 2005 Standards who intend to performs ratings under the 2008 standards MUST take this (or portions of this) update course. The 2008 standards go into effect on August 1, 2009. You may continue to do ratings for the 2005 standards, but you must take and pass this update course in order to do any projects that have been permitted under the new 2008 standards		HVAC Installers	Residential	Seminar; Certification	None	Sierra Building Science	Sacramento Metro Chamber		\$300 Yes	<a href="http://www.sierrabuildingscience.com/flyers/Class%20Code%20090529UN.pdf">http://www.sierrabuildingscience.com/flyers/Class%20Code%20090529UN.pdf</a>
Title-24 HERS Rater Certification Training for Solar Home Verification Session P	This training is intended to train and certify people interested in performing HERS field verification and diagnostic testing for third party inspection of Photovoltaic/Solar systems for NSHP (New Solar Homes Partnership) and CSI (California Solar Initiative). We will also cover Tier I and Tier II energy efficiency. A Manual and reference materials will be provided. Hands on laboratory will also cover Tier I and Tier II energy efficiency. A Manual and reference materials will be provided. Hands on laboratory instruction will be given on-site at the SMUD Training Center (map will be provided during class). Sessions A and B are a prerequisite for this class. You may take Session P prior to Sessions A and B, however you will not be Certified to test PV systems until you have completed and passed both Sessions A & B.			Residential	Seminar; Certification	None	Sierra Building Science	SBS Center		\$500 Yes	<a href="http://www.sierrabuildingscience.com/flyers/Class%20Code%20090514PN.pdf">http://www.sierrabuildingscience.com/flyers/Class%20Code%20090514PN.pdf</a>
Title-24 HERS Rater Certification Training for Alterations to Existing Homes Session A	Session A is intended to train and certify people interested in performing HERS field verification and diagnostic testing for third party inspection of Title 24 energy features on alterations to existing homes only (retrofits, change-outs, cut- ins, etc.). Session A covers the basic rules and regulations that govern how all HERS raters must operate (Title 20) and a general overview of the Title 24 Energy Codes. Session A is a prerequisite for all other CalCERTS certification classes. Note that the alterations requirements to not apply to all climate zones. For more information visit: <a href="http://www.energy.ca.gov/2005publications/CEC-400-2005-046/CEC-400-2005-046.PDF">http://www.energy.ca.gov/2005publications/CEC-400-2005-046/CEC-400-2005-046.PDF</a>			Residential	Seminar; Certification	None	Sierra Building Science	SBS Center		\$530 Yes	<a href="http://www.sierrabuildingscience.com/flyers/Class%20Code%20090518AN.pdf">http://www.sierrabuildingscience.com/flyers/Class%20Code%20090518AN.pdf</a>
Title-24 HERS Rater Certification Training for All Homes: New Construction Session B	This training is intended to train and certify people interested in performing HERS field verification and diagnostic testing for third party inspection of Title 24 energy features on all homes (existing and new construction). Session A is a prerequisite for this class. Session B is a continuation of Session A. It will cover the verification of energy features required for the construction of a new home. After successfully completing both the A and B classes, raters will be certified for all low-rise residential construction: alterations, additions and new construction.			Residential	Seminar; Certification	None	Sierra Building Science	SBS Center		\$500 Yes	<a href="http://www.sierrabuildingscience.com/flyers/Class%20Code%20090601BN.pdf">http://www.sierrabuildingscience.com/flyers/Class%20Code%20090601BN.pdf</a>
Operator Ceritfication Training Academy Classes	UCL Academy features a tuii menu of training/education services; operations seminars, workshops and certification review sessions for water and wastewater operator personnel nationwide utilizing a network of highly qualified, contract instructors. A complete spectrum of training offered in water treatment plant operations, wastewater treatment plant operations, distribution system operations, collection system operations, pumps, and management training year-round for both public and in-house sessions across the country.	Water Treatment	Watse water teatment plant opertaors and personnel	Commercial	workshops; training materials	Varies	OCT, Inc.	Internet; in person		Varies Yes	<a href="http://www.octinc.com/">http://www.octinc.com/</a>



Course Title	Course Description	Topic Area(s)	Target Audience	Market Sector (if applicable)	Type (Seminar, Certification, College Class, etc.)	Course Units and Type, if applicable	Offered By	Location	Cost	Available Now? If no, list start date:	Website, and/or additional info
GreenPoint Rater (New Homes)	Training participants will attend a 3.5-day course based on the GreenPoint Rated system, including exams and half-day field test. Participants will learn about green building, the intent behind each green measure, detailed verification protocols, and the policies and processes for participating in the GreenPoint Rated program.	Audits			Seminar; Certification	None	Build It Green	SMUD	member /\$600 nonmember	Yes	<a href="http://www.builditgreen.org/training-workshops-events">http://www.builditgreen.org/training-workshops-events</a>
GreenPoint Rater (New Homes) with Certified Green Building Professional Training (CGBP)	See course descriptions above	Audits			Seminar; Certification	None	Build It Green	SMUD	\$850 member /\$900 nonmember \$400 member	Yes	<a href="http://www.builditgreen.org/training-workshops-events">http://www.builditgreen.org/training-workshops-events</a>
GreenPoint Rater (Existing Homes)	This course uses visual examples of actual construction sites, demonstrating how to verify each of the GreenPoint Rated - Existing Home measures. You will participate in interactive exercises and case studies to help you learn the process. Energy software will be demonstrated, and you will learn step-by-step processes to be an effective GreenPoint Rater or Advisor for Existing Home (GPR - EH). practices. Expert instructors and guest speakers provide in-depth presentations on green building and business topics: Energy/Building Science (4 CEUs) <ul style="list-style-type: none"> <li>Moisture Issues (flashing, drainage planes, site drainage, etc.)</li> <li>Insulation and Weatherization (choices and installation)</li> <li>HVAC, Ductwork, Air Pressures (best practices)</li> <li>Performance Testing and Problem Diagnosis (systems thinking)</li> </ul> Case Studies and Research Site/Landscaping/Water (4 CEUs) <ul style="list-style-type: none"> <li>Construction Site Management</li> <li>Irrigation</li> <li>Bay-Friendly and Fire-Safe Landscaping</li> <li>Water Heating and Plumbing Systems</li> <li>Rainwater Collection</li> </ul>	Audits			Seminar; Certification	None	Build It Green	SMUD	member /\$450 nonmember	Yes	<a href="http://www.builditgreen.org/training-workshops-events">http://www.builditgreen.org/training-workshops-events</a>
Advanced CGBP Training 1	practices. Expert instructors and guest speakers provide in-depth presentations on green building and business topics: Science (4 CEUs) Affordable, Effective Mechanical Ventilation <ul style="list-style-type: none"> <li>Indoor Air Pollutants and Source Control</li> <li>Qualities of a Good Ventilation System</li> <li>Airtightness, Pressure, and Ventilation</li> <li>System Types, Costs, Pros &amp; Cons</li> </ul> Materials/ IAQ (4 CEUs) The New Energy Star with Indoor Air Plus Program <ul style="list-style-type: none"> <li>Program description</li> <li>Specifications of the 37 measures</li> <li>Best practices for design and installation</li> </ul>	Energy Basics			Seminar	4-8 CEU	Build It Green	SMUD	\$200 member /\$250 nonmember	Yes	<a href="http://www.builditgreen.org/training-workshops-events">http://www.builditgreen.org/training-workshops-events</a>
Advanced CGBP Training 2		Material Selection			Seminar	4-8 CEU	Build It Green	SMUD	\$200 member /\$250 nonmember	Yes	<a href="http://www.builditgreen.org/training-workshops-events">http://www.builditgreen.org/training-workshops-events</a>
Energy Auditing Techniques for Small and Medium Commercial Facilities	The intention of this three-day workshop is to develop the energy auditing skills of individuals associated with small-and medium-sized (under 500 kW) commercial facilities. We will provide an overview of building technologies with an emphasis on distinguishing older, inefficient equipment from newer efficient systems. In-class exercises and a mock-audit at the end of the last day will allow the attendees to apply what they have learned. Though geared to the non-experts, attendees should have a fundamental understanding of building components and energy concepts.	Audits; Bldg Perf	This introductory course is suitable for all those who want to learn energy auditing skills. Participants should have a basic understanding of building components and energy concepts.		Seminar	None	PG&E	San Francisco--PEC	No fee	Yes	<a href="http://www.pge.com/mybusiness/edusafety/training/pec/classes/index.jsp?reqType=detail&amp;ID=3406&amp;db=PEC3406.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes">http://www.pge.com/mybusiness/edusafety/training/pec/classes/index.jsp?reqType=detail&amp;ID=3406&amp;db=PEC3406.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes</a>
Energy Auditing Techniques for Small and Medium Commercial Facilities	The intention of this three-day workshop is to develop the energy auditing skills of individuals associated with small-and medium-sized (under 500 kW) commercial facilities. We will provide an overview of building technologies with an emphasis on distinguishing older, inefficient equipment from newer efficient systems. In-class exercises and a mock-audit at the end of the last day will allow the attendees to apply what they have learned. Though geared to the non-experts, attendees should have a fundamental understanding of building components and energy concepts.	Audits; Bldg Perf	This introductory course is suitable for all those who want to learn energy auditing skills. Participants should have a basic understanding of building components and energy concepts.		Seminar	None	PG&E	San Francisco--PEC	No fee	Yes	<a href="http://www.pge.com/mybusiness/edusafety/training/pec/classes/index.jsp?reqType=detail&amp;ID=3406&amp;db=PEC3406.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes">http://www.pge.com/mybusiness/edusafety/training/pec/classes/index.jsp?reqType=detail&amp;ID=3406&amp;db=PEC3406.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes</a>
A Tool Day Workshop: An Overview of Applications from the Tool Lending Library	This full day workshop is built around the Pacific Energy Center's Tool Lending Library, a free building measurement tool lending service for California energy customers. The lending library includes over 400 individual tools that range from simple temperature meters to datalogging power meters. The intention of the workshop is to expose attendees to a number of the more commonly used tools. View the tools available at Tool Lending Library.  The workshop will be hands-on in nature, integrating interactive exercises with lecture material on basic building science concepts. The lecture portion for each module will prepare the attendees for a tool application. For instance, we will quickly cover electrical system fundamentals, such as voltage, current, and power factor, before demonstrating the use of power meters.  Each module will also include a tool demonstration, and in most cases the attendees will be able to use the tool demonstrated immediately. Where possible, we will be taking measurements of the facility where the program is being held. Topics will include measuring temperature, humidity, illuminance, equipment run time, occupancy, carbon dioxide, differential pressure, airflow, electrical power and energy. We will provide student computers for programming dataloggers and manipulating the collected data.	Audits; Building Performance	This introductory-level training is geared toward building professionals with little or no experience using measurement tools.		Full-day workshop	None	PG&E	<a href="#">Davis--CA Lighting Tech Center</a>	No fee	Yes	<a href="http://www.pge.com/mybusiness/edusafety/training/pec/classes/resources/ToolDay_resource\$09.pdf">http://www.pge.com/mybusiness/edusafety/training/pec/classes/resources/ToolDay_resource\$09.pdf</a>

Cool Roofs - Program Opportunities and Code Requirements	The speakers will introduce PG&E's Residential Cool Roof Rebate Program, discuss how the technology works, describe available products, and explain how roofing and design professionals can help customers qualify for rebates and benefit from this cool new technology.	Bldg Env; Incentive Progs	This class is intended for residential roofing contractors and architects and builders who select or specify roofing products, but it will also benefit energy consultants, building code officials, and remodelers.	Seminar	None	PG&E	San Jose--Pipe Trades	No fee	Yes	<a href="http://www.pge.com/mybusiness/edusafety/trainin g/pec/classes/index.jsp?reqType=detail&amp;ID=3496&amp;d b=PEC3496.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes">http://www.pge.com/mybusiness/edusafety/trainin g/pec/classes/index.jsp?reqType=detail&amp;ID=3496&amp;d b=PEC3496.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes</a>
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How To Think About Building Energy Models for Nonresidential Buildings	Learn the capabilities and limitations of energy models and how to improve architect-engineer communication to effectively use energy modeling throughout the design process.	Bldg Perf	The program is best suited to architects and engineers with a minimum of several years work experience. It is a basic to intermediate level program.	Seminar	AIA: 2.5 (HSW)	PG&E	San Francisco--PEC	No fee	Yes	<a href="http://www.pge.com/mybusiness/edusafety/trainin g/pec/classes/index.jsp?reqType=detail&amp;ID=3384&amp;d b=PEC3384.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes">http://www.pge.com/mybusiness/edusafety/trainin g/pec/classes/index.jsp?reqType=detail&amp;ID=3384&amp;d b=PEC3384.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes</a>
Integrating Energy Efficiency and Renewables for Optimum Return on Investment	Class instructors will detail this whole-building perspective, beginning with the science of building performance that studies how all energy systems in a building work together. Understanding and managing this interplay is crucial to achieving optimum performance, and lack of this interplay can cause even the "greenest" buildings to underperform. Choosing where to invest requires assessing all options and being able to quantify their energy savings.	Bldg Perf	Class is suitable for a wide range of contractors, facility managers, architects, designers, homeowners, and the general public.	Commercial Seminar	None	PG&E	San Francisco--PEC	No fee	Yes	<a href="http://www.pge.com/mybusiness/edusafety/trainin g/pec/classes/index.jsp?reqType=detail&amp;ID=3444&amp;d b=PEC3444.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes">http://www.pge.com/mybusiness/edusafety/trainin g/pec/classes/index.jsp?reqType=detail&amp;ID=3444&amp;d b=PEC3444.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes</a>
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Energy Audit Skills: Tools, Data Collection Techniques, and Calculations	This one-day program serves as an addendum to the PEC's three-day Energy Audits training with a focus on monitoring equipment, data collection, and cost calculations. Topics will include collecting nameplate data, billing data analysis, equipment efficiencies, run-time monitoring, pay-back analysis, and life cycle cost calculations. We will provide laptop computers for hands-on exercises.	Bldg perf; Audits	Intended for introductory-levels attendees but all registrants should first attend the PEC's three-day audit training before taking this class.	Seminar	None	PG&E	San Francisco--PEC	No fee	Yes	<a href="http://www.pge.com/mybusiness/edusafety/trainin g/pec/classes/index.jsp?reqType=detail&amp;ID=3423&amp;d b=PEC3423.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes">http://www.pge.com/mybusiness/edusafety/trainin g/pec/classes/index.jsp?reqType=detail&amp;ID=3423&amp;d b=PEC3423.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes</a>
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Higher Environmental Performance Standards: New Context, New Expectations, New Responsibilities	Over the past five years we have witnessed a considerable increase in environmental awareness and engagement. The expectation now is for buildings to be designed to significantly higher environmental performance standards. These required leaps in performance improvement must be made in timeframes shorter than those to which the building industry has historically been accustomed or achieved. Dr. Ray Cole, an internationally recognized expert on environmental building practices and building assessment methods, will review current international developments in green building with particular emphasis on topics listed in the agenda below.	Bldg Perf; Climate and Environemnt	This is an intermediate level session. It assumes familiarity with fundamental green building principles and practice as well as approaches to building environmental assessment methodologies.	Seminar	AIA: 2.5 (HSW)	PG&E	San Francisco--PEC	No fee	Yes	<a href="http://www.pge.com/mybusiness/edusafety/trainin g/pec/classes/index.jsp?reqType=detail&amp;ID=3370&amp;d b=PEC3370.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes">http://www.pge.com/mybusiness/edusafety/trainin g/pec/classes/index.jsp?reqType=detail&amp;ID=3370&amp;d b=PEC3370.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes</a>
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Green Home Energy Upgrades: Level 1- Classroom	Our ability to measure the energy features in a home has changed the way we approach home energy improvements. Performance testing enables us to identify and quantify the opportunity for improvement in all categories--insulation and air sealing, windows and doors, duct leakage and conduction, HVAC equipment air flow and efficiency, room air balancing and mixing, etc.									
	This ability to measure energy features enables home performance contractors to reduce energy consumption in most existing homes by 60% to 80%, while improving comfort, indoor air quality, and structural durability. This evidence-based approach to solving thermal comfort problems and reducing energy bills distinguishes the Home Performance Contractor from all other contractors.									
	This 3-day overview class is the core of the Green Home Energy Upgrades series and is a pre-requisite for Level 2 Lab & Field. Rick Chitwood is the lead trainer for the California Building Performance Contractors Association (CBPCA), which is affiliated with the national EPA's Home Performance with Energy Star program. For more information about CBPCA, including this training curriculum, visit <a href="http://www.cbpc.org">www.cbpc.org</a> or call (888) 352-2722.	Bldg Performance; Bldg Envelope	This course is intended for home improvement contractors and other home energy professionals familiar with home construction and remodeling.	Residential	3-day class	AIA: 18 (HSW)	PG&E	Auburn--Holiday Inn	No fee	Yes



Advanced Framing for Energy and Resource Efficiency	In this class, we describe a variety of advanced design and installation methods for optimizing wood-framed building enclosures. The class is intended to enable architects and builders to overcome the most common hurdles to implementing advanced framing in low-rise residential and small commercial buildings.	Bldg Performance; Bldg Envelope	This course requires basic knowledge of wood-frame construction. It is designed for designers but will also benefit builders, developers, remodelers, structural engineers, energy consultants, and green building professionals.	Commercial	Seminar	None	PG&E	San Jose--Pipe Trades	No fee	Yes	<a href="http://www.pge.com/mybusiness/edusafety/training/pec/classes/index.jsp?reqType=detail&amp;ID=3485&amp;db=PEC3485.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes">http://www.pge.com/mybusiness/edusafety/training/pec/classes/index.jsp?reqType=detail&amp;ID=3485&amp;db=PEC3485.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes</a>
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Scott Shell: Toward Zero-Net Energy--Thoughts and Lessons From a Working Architect - An Online Course	Scott Shell, a Principle at EHDD Architecture, will use completed projects and several currently in design to discuss their experience with net-zero energy buildings, and to demonstrate that they are more feasible than many people think. Various definitions will be examined including net zero energy, electricity, energy cost, and carbon; and other cases that don't fit neatly into our definitions. Scott will also discuss the difference between designing for net-zero and achieving it in actual building operations. He will illustrate the discussion with measured energy data from completed projects such as Chartwell School, which set net-zero electricity as a goal; and modeled energy targets for projects still in design, including the Exploratorium, the Packard Foundation, Marin Country Day School, and the Ocean Sciences Building at UC Santa Barbara.	Building Performance	This evening lecture will benefit a broad range of those interested in energy efficiency in buildings.		Evening Seminar	None	PG&E	Internet; San Francisco--PEC	No fee	Yes	<a href="http://www.pge.com/mybusiness/edusafety/training/pec/classes/index.jsp?reqType=detail&amp;ID=3503&amp;db=PEC3503.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes">http://www.pge.com/mybusiness/edusafety/training/pec/classes/index.jsp?reqType=detail&amp;ID=3503&amp;db=PEC3503.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes</a>
Green Home Energy Upgrades: Introduction	Together with its site and occupants, every existing home is unique, and most have comfort, indoor air quality and energy problems that are difficult to solve (and easy to make worse!) unless you use a comprehensive scientific approach. Home performance contracting is an emerging "green collar" industry that benefits homeowners by solving their comfort and indoor air quality problems and benefits contractors by expanding their ability to solve problems, satisfy customers, and improve environments.  Home performance is supported at the national level by EPA's Home Performance with Energy Star and at the state level by the California Building Performance Contractors Association (CBPCA). PG&E will soon offer incentives for home energy upgrades by home performance contractors.  From building science to business opportunities and site evaluation to diagnostic testing, this class is intended to help interested, quality-oriented contractors decide whether to undertake more comprehensive training. It is also suitable for any residential building professional, from architects to realtors, who want to learn more and get involved in this exciting field. The intention of this three-day workshop is to develop the energy auditing skills of individuals associated with small-and medium-sized (under 500 kW) commercial facilities. We will provide an overview of building technologies with an emphasis on distinguishing older, inefficient equipment from newer efficient systems. In-class exercises and a mock-audit at the end of the last day will allow the attendees to apply what they have learned. Though geared to the non-experts, attendees should have a fundamental understanding of building components and energy concepts.	Building Performance	This class is intended for residential remodelers, mechanical and other home improvement contractors, but is also suitable for other residential building professionals who want to know more about the technical and market aspects of home performance contracting.	Residential	Seminar	None	PG&E	Sacramento--CFM	No fee	Yes	<a href="http://www.pge.com/mybusiness/edusafety/training/pec/classes/index.jsp?reqType=detail&amp;ID=3520&amp;db=PEC3520.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes">http://www.pge.com/mybusiness/edusafety/training/pec/classes/index.jsp?reqType=detail&amp;ID=3520&amp;db=PEC3520.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes</a>
Energy Auditing Techniques for Small and Medium Commercial Facilities	The class will begin with a discussion of energy and building terms and be followed by a module on utility rates and billing data analysis. The overview of building technologies and efficiencies will include modules on lighting, mechanical systems, motors, refrigeration, gas, envelope, kitchen equipment and renewables. Because identifying retrofit opportunities is the focus of this training, instructors will illustrate optimal equipment choices through samples, images of real installations, and performance data. Measurement tools that auditors use to identify equipment efficiencies or to test system performance will be demonstrated with each topic.  Each module will include a section on calculating energy savings for various applications. Several in-class exercises using real-world data will be built around these calculations. An additional section on financial calculations will include material on pay back analysis, net present value, internal rate of return, and other life-cycle-cost analysis models.	Building performance; Audits	This introductory course is suitable for all those who want to learn energy auditing skills. Participants should have a basic understanding of building components and energy concepts.	Commercial	Workshop	None	PG&E	Stockton--ETC	No fee	Yes	<a href="http://www.pge.com/mybusiness/edusafety/training/pec/classes/index.jsp?reqType=detail&amp;ID=3407&amp;db=PEC3407.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes">http://www.pge.com/mybusiness/edusafety/training/pec/classes/index.jsp?reqType=detail&amp;ID=3407&amp;db=PEC3407.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes</a>
Green Home Energy Upgrades: Level 2-Lab and Field	Home performance contracting is the way to "green" existing homes, but not all home energy professionals can be home performance contractors. This 3-day hands-on workshop is for contractors ready to undertake the further training needed to apply the principles learned in Level 1 to the evaluation, testing, and diagnosis of real homes, with all their complexity and uniqueness. Note: navigating an attic and/or crawlspace is involved. Level 2 classes are held at PG&E's Energy Training Center in Stockton.	Building Performance; Building Envelope	Green Home Energy Upgrades: Level 1 is a pre-requisite for this class, and individual participation is contingent on approval by CBPCA.org. This hands-on workshop is intended for home improvement contractors who want to participate in the Home Performance with Energy Star program.	Residential	Workshop	none	PG&E	Stockton--ETC	No fee	Yes	<a href="http://www.pge.com/mybusiness/edusafety/training/pec/classes/index.jsp?reqType=detail&amp;ID=3527&amp;db=PEC3527.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes">http://www.pge.com/mybusiness/edusafety/training/pec/classes/index.jsp?reqType=detail&amp;ID=3527&amp;db=PEC3527.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes</a>
Cathy Turner: Closing the Loop - Measuring Green Building Energy Efficiency Results - An Online Course	In this session, Cathy Turner, Senior Analyst for New Buildings Institute (NBI) presents findings from NBI's study of measured energy performance of 121 LEED buildings. All of these buildings had been occupied for at least one year. The study found that on average LEED buildings are delivering energy savings. However, the study also revealed wide variability among individual building results, indicating significant potential for further improvement. Each of the major groups affecting performance--designers, owners/operators, and tenants--contributed to the actual results. Discussion will include recommendations for improving the availability and use of feedback to narrow the gap between design intent and actual results.	Building performance; LEED	Building designers, contractors, owners/operators, tenants		webinar	None	PG&E	Internet	No fee	Yes	<a href="http://www.pge.com/mybusiness/edusafety/training/pec/classes/index.jsp?reqType=detail&amp;ID=3609&amp;db=PEC3609.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes">http://www.pge.com/mybusiness/edusafety/training/pec/classes/index.jsp?reqType=detail&amp;ID=3609&amp;db=PEC3609.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes</a>



Commissioning with Data Loggers	<p>This class will expose the attendees to hands-on experience using the data loggers and related resources, which are available for loan at no cost to Pacific Gas and Electric customers from the Pacific Energy Center Tool Lending Library. In the course of the class, the attendees will learn how to program, deploy, and retrieve data from the data loggers by applying them to the systems and equipment at the Pacific Energy Center.</p>	Commissioning; Bldg perf	Class is intended for building professionals with some commissioning experience. It is suggested that attendees take the PEC's Retrocommissioning 101 class before this one.	Seminar	None	PG&E	San Francisco--PEC	No fee	Yes	<a href="http://www.pge.com/mybusiness/edusafety/trainin g/pec/classes/index.jsp?reqType=detail&amp;ID=3451&amp;d b=PEC3451.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes">http://www.pge.com/mybusiness/edusafety/trainin g/pec/classes/index.jsp?reqType=detail&amp;ID=3451&amp;d b=PEC3451.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes</a>
ACCA Manual D - Duct Design	<p>It is recommended that participants attend this class prior to attending the Zoning Design and Beyond and Advanced ACCA Manual D classes. This class provides a review of the ACCA Residential Design System and approved software, Manual D procedure, and proper documentation. Learn how to achieve efficiency compliance while optimizing ductwork for competitive pricing and comfort. North American Technician Excellence (NATE) continuing education credits are available for this class.</p> <p>Come hear a staff member of the nationally acclaimed Davis Energy Group BREEZE through the details on how to make compressorless cooling technologies work for your residential customers! Learn the details on:</p>	HVAC	This is an entry level course for participants that have already attended Equipment Sizing & Selection Using ACCA Manual J.	Seminar	North American Technician Excellence (NATE) credits availa	PG&E	Stockton--ETC	No fee	Yes	<a href="http://www.pge.com/mybusiness/edusafety/trainin g/pec/classes/index.jsp?reqType=detail&amp;ID=3472&amp;d b=PEC3472.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes">http://www.pge.com/mybusiness/edusafety/trainin g/pec/classes/index.jsp?reqType=detail&amp;ID=3472&amp;d b=PEC3472.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes</a>
Compressorless Cooling	<p>- Whole House Cooling Fans</p> <p>- Single-Stage Direct Evaporative Cooling</p> <p>- Indirect/Direct Two-Stage Evaporative Cooling</p> <p>- Residential Economizers</p> <p>- Utility Rebate for Whole House Cooling Fans and Evaporative Coolers</p>	HVAC	This is an introductory course intended for practicing mechanical contractors seeking design and installation information that is specific to compressorless cooling technologies.	Residential Seminar	None	PG&E	Stockton--ETC	No fee	Yes	<a href="http://www.pge.com/mybusiness/edusafety/trainin g/pec/classes/index.jsp?reqType=detail&amp;ID=3493&amp;d b=PEC3493.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes">http://www.pge.com/mybusiness/edusafety/trainin g/pec/classes/index.jsp?reqType=detail&amp;ID=3493&amp;d b=PEC3493.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes</a>
Advanced ACCA Manual D	<p>It is recommended that participants attend the ACCA Manual D Duct Design course prior to attending this class. This class will step beyond the introduction to ACCA Manual D to more advanced topics, including how to perform Manual D calculations both manually and using the official Wrightsoft ACCA computer software program. This class will be presented using computers for hands-on training. Participants will perform group exercises and have the opportunity to work on individual problems with the instructor's assistance.</p> <p>Class topics will cover:</p> <p>- homes with multiple HVAC systems</p> <p>- two-story homes with single systems</p> <p>- using the computer program to generate room-by-room load calculations and select HVAC equipment</p> <p>- how to use the graphic design module of the computer software, which automatically calculates room-by-room load calculations and provides Manual D duct design. North American Technician Excellence (NATE) continuing education credits are available for this course.</p>	HVAC	It is recommended that participants taking this advanced class should prepare by first taking both the Equipment Sizing & Selection Using ACCA Manual J class and the ACCA Manual D class.	Workshop	none	PG&E	Stockton--ETC	No fee	Yes	<a href="http://www.pge.com/mybusiness/edusafety/trainin g/pec/classes/index.jsp?reqType=detail&amp;ID=3483&amp;d b=PEC3483.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes#register">http://www.pge.com/mybusiness/edusafety/trainin g/pec/classes/index.jsp?reqType=detail&amp;ID=3483&amp;d b=PEC3483.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes#register</a>
ACCA Manual N - Equipment Sizing & Selection	<p>This computer based course will assist you in designing HVAC systems for one and two story commercial spaces using unitary packaged rooftop equipment. Air Conditioning Contractors of America (ACCA) Commercial Loads (Manual N), and Equipment Selection (Manual CS) are referenced within the software suite. Topics include: Building location and orientation, Construction types, lighting and occupancy, block load simulation, equipment selection, and practice exercises. We recommend taking this course after ACCA Manual J Equipment Sizing and Selection, and Advanced ACCA Manual D.</p>	HVAC	This course is designed for practicing HVAC system designers who regularly deal with commercial buildings.	Commercial Workshop	none	PG&E	Stockton--ETC	No fee	Yes	<a href="http://www.pge.com/mybusiness/edusafety/trainin g/pec/classes/index.jsp?reqType=detail&amp;ID=3478&amp;d b=PEC3478.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes">http://www.pge.com/mybusiness/edusafety/trainin g/pec/classes/index.jsp?reqType=detail&amp;ID=3478&amp;d b=PEC3478.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes</a>
Advanced ACCA Manual N	<p>This is a computer-based course that will assist students in designing small commercial duct systems. We recommend that students take this course after ACCA Manual J Equipment Sizing and Selection, Advanced ACCA D, and ACCA Manual N Equipment Sizing and Selection. Topics include: Zoning, Tailored space by space load analysis, Duct Design, and Practice exercises.</p>	HVAC	This course is designed primarily for HVAC Engineers who design small commercial HVAC systems.	Commercial Workshop	none	PG&E	Stockton--ETC	No fee	Yes	<a href="http://www.pge.com/mybusiness/edusafety/trainin g/pec/classes/index.jsp?reqType=detail&amp;ID=3484&amp;d b=PEC3484.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes">http://www.pge.com/mybusiness/edusafety/trainin g/pec/classes/index.jsp?reqType=detail&amp;ID=3484&amp;d b=PEC3484.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes</a>
Proper Procedures for Charging Air Conditioners & Heat Pumps	<p>This one-day class will provide hands-on training and exercises on the proper methods for checking charge and measuring air flow for residential and small commercial air conditioners and heat pumps. The instructor will review the basics of the refrigeration cycle, and discuss in detail the three methods of charging systems; charging by superheat with fixed orifice metering devices, charging by subcooling with thermostatic expansion valve metering devices, and weighing in the charge. Portable AC and heat pump training props are used to enhance the learning process by practicing techniques discussed during the class. Practicing HVAC technicians will gain valuable information which will improve system performance for their customers!</p>	HVAC	This course is designed for the experienced residential HVAC service technician.	Workshop	None	PG&E	Stockton--ETC	No fee	Yes	<a href="http://www.pge.com/mybusiness/edusafety/trainin g/pec/classes/index.jsp#classresults">http://www.pge.com/mybusiness/edusafety/trainin g/pec/classes/index.jsp#classresults</a>
Optimizing Air Conditioner Performance in California's Climate	<p>This course covers specific items on making air conditioning systems perform exceptionally well in California's climate</p>	HVAC	Experienced HVAC technicians	Commercial; residential Seminar	None	PG&E	Santa Rosa - Builders Exchange	No fee	Yes	<a href="http://www.pge.com/mybusiness/edusafety/trainin g/pec/classes/index.jsp?reqType=detail&amp;ID=3546&amp;d b=PEC3546.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes">http://www.pge.com/mybusiness/edusafety/trainin g/pec/classes/index.jsp?reqType=detail&amp;ID=3546&amp;d b=PEC3546.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes</a>
North American Technician Excellence (NATE) Test Prep/Review	<p>NATE is an independent, third party certification body for HVACR technicians. NATE tests technicians. In preparation of the NATE Certification Test, a preparatory session will be held with an intensive review of core and air conditioning KATEs (Knowledge Areas of Technician).</p>	HVAC	This is an advanced course intended for HVAC service technicians and installers who are very familiar with the common types of HVAC equipment and typical service and installation challenges.	Commercial; residential Seminar	None	PG&E	Oakland - Laney College Fresno - City College	No fee	Yes	<a href="http://www.pge.com/mybusiness/edusafety/trainin g/pec/classes/index.jsp?reqType=detail&amp;ID=3540&amp;d b=PEC3540.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes">http://www.pge.com/mybusiness/edusafety/trainin g/pec/classes/index.jsp?reqType=detail&amp;ID=3540&amp;d b=PEC3540.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes</a>
Optimizing Air Conditioner Performance in California's Climate	<p>This course covers specific items on making air conditioning systems perform exceptionally well in California's climate</p>	HVAC	Experienced HVAC technicians	Commercial; residential Seminar	None	PG&E	Santa Rosa - Builders Exchange	No fee	Yes	<a href="http://www.pge.com/mybusiness/edusafety/trainin g/pec/classes/index.jsp?reqType=detail&amp;ID=3546&amp;d b=PEC3546.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes">http://www.pge.com/mybusiness/edusafety/trainin g/pec/classes/index.jsp?reqType=detail&amp;ID=3546&amp;d b=PEC3546.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes</a>
North American Technician Excellence (NATE) Test Prep/Review	<p>NATE is an independent, third party certification body for HVACR technicians. NATE tests technicians. In preparation of the NATE Certification Test, a preparatory session will be held with an intensive review of core and air conditioning KATEs (Knowledge Areas of Technician).</p>	HVAC	This is an advanced course intended for HVAC service technicians and installers who are very familiar with the common types of HVAC equipment and typical service and installation challenges.	Commercial; residential Seminar	None	PG&E	Oakland - Laney College Fresno - City College	No fee	Yes	<a href="http://www.pge.com/mybusiness/edusafety/trainin g/pec/classes/index.jsp?reqType=detail&amp;ID=3540&amp;d b=PEC3540.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes">http://www.pge.com/mybusiness/edusafety/trainin g/pec/classes/index.jsp?reqType=detail&amp;ID=3540&amp;d b=PEC3540.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes</a>

HVAC Case Studies of Successful Retrofit and RetroCx Projects	<p>In this market, the best investment may be your own workplace. Experts from Taylor Engineering, LLC; Quantum Energy Services &amp; Technologies (QuEST); KW Engineering, LLC; and Cogent Energy will present their best projects and programs for energy efficient retrofits and retrocommissioning. These case studies will document cost-effective investments in improved HVAC system operation in commercial and institutional buildings. In addition to the engineering presentations, facility personnel will present their perspectives on the work done by these firms.</p>	HVAC Controls	<p>This advanced class is targeted to building owners, contractors, and engineers familiar with mechanical systems and controls in commercial buildings.</p>	Seminar	None	PG&E	San Francisco--PEC	No fee	Yes	<a href="http://www.pge.com/mybusiness/edusafety/trainin g/pec/classes/index.jsp?reqType=detail&amp;ID=3394&amp;d b=PEC3394.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes">http://www.pge.com/mybusiness/edusafety/trainin g/pec/classes/index.jsp?reqType=detail&amp;ID=3394&amp;d b=PEC3394.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes</a>	
HVAC Case Studies of Successful Retrofit and RetroCx Projects	<p>In this market, the best investment may be your own workplace. Experts from Taylor Engineering, LLC; Quantum Energy Services &amp; Technologies (QuEST); KW Engineering, LLC; and Cogent Energy will present their best projects and programs for energy efficient retrofits and retrocommissioning. These case studies will document cost-effective investments in improved HVAC system operation in commercial and institutional buildings. In addition to the engineering presentations, facility personnel will present their perspectives on the work done by these firms.</p>	HVAC Controls	<p>This advanced class is targeted to building owners, contractors, and engineers familiar with mechanical systems and controls in commercial buildings.</p>	Seminar	None	PG&E	San Francisco--PEC	No fee	Yes	<a href="http://www.pge.com/mybusiness/edusafety/trainin g/pec/classes/index.jsp?reqType=detail&amp;ID=3394&amp;d b=PEC3394.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes">http://www.pge.com/mybusiness/edusafety/trainin g/pec/classes/index.jsp?reqType=detail&amp;ID=3394&amp;d b=PEC3394.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes</a>	
Low Energy HVAC Approaches for Nonresidential Buildings - An Online Course	<p>Peter Rumsey, engineer and nationally recognized leader in green building, offers a guide for architects on low-energy mechanical systems, including design implications and architectural integration.</p> <p>In this seminar, we will examine the role of a mechanical engineer in a LEED Platinum project. Three San Francisco Bay Area firms-- ARUP, Rumsey Engineers, and Taylor Engineering--will present case studies of operating LEED platinum projects. Each case study includes post-occupancy performance data and perspectives from the building owners or engineers.</p>	HVAC; Bldg Envelope	<p>This program is intended for architects and building owners. It assumes basic, but not detailed, familiarity with energy issues related to the building envelope and reduction of the need for mechanical heating and cooling.</p>	Commercial	webinar	None	PG&E	Internet	No fee	Yes	<a href="http://www.pge.com/mybusiness/edusafety/trainin g/pec/classes/index.jsp?reqType=detail&amp;ID=3500&amp;d b=PEC3500.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes">http://www.pge.com/mybusiness/edusafety/trainin g/pec/classes/index.jsp?reqType=detail&amp;ID=3500&amp;d b=PEC3500.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes</a>
HVAC Case Studies of Successful LEED Platinum Projects - An Online Course	<p>The session will start with a presentation by the New Building's Institute on its survey of the field performance of 121 LEED NC 2.2 rated projects. Visit this Web site for a review of those projects: <a href="http://www.newbuildings.org/measuredPerformance.htm">http://www.newbuildings.org/measuredPerformance.htm</a>.</p>	HVAC; Bldg Performance; Controls; LEED	<p>This class is of general interest. It assumes a basic familiarity with HVAC systems.</p>		webinar	None	PG&E	Internet	No fee	Yes	<a href="http://www.pge.com/mybusiness/edusafety/trainin g/pec/classes/index.jsp?reqType=detail&amp;ID=3642&amp;d b=PEC3642.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes">http://www.pge.com/mybusiness/edusafety/trainin g/pec/classes/index.jsp?reqType=detail&amp;ID=3642&amp;d b=PEC3642.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes</a>
Go Ductless California, Try Mini-Splits!	<p>Canadian HVAC expert Skip Hayden will provide an in-depth seminar addressing all aspects of ductless mini-split heat pump systems. Topics include basic configurations and operation, possibilities for high efficiency heating and cooling, possible applications in North American housing, current barriers to their use in North, and the role of mini splits in our energy future.</p>	HVAC; Building Performance	<p>This is a basic course for residential and small commercial builders and developers, general contractors, architects and designers, HVAC technicians and installers, HVAC mechanical engineers, HERS Raters, Home Inspectors.</p>		Seminar	None	PG&E	Stockton--ETC	No fee	Yes	<a href="http://www.pge.com/mybusiness/edusafety/trainin g/pec/classes/index.jsp?reqType=detail&amp;ID=3517&amp;d b=PEC3517.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes">http://www.pge.com/mybusiness/edusafety/trainin g/pec/classes/index.jsp?reqType=detail&amp;ID=3517&amp;d b=PEC3517.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes</a>
Combined Hydronic Space and Water Heating for Homes	<p>Combined hydronic space and water heating systems use water heaters with fan coil systems to provide both space and water heating needs for homes. Attendees will learn the advantages these systems have for customers, as well as proper sizing and installation techniques. Topics will include house as a system concepts, water heater sizing and selection, fan coil sizing and selection, space saving techniques, duct system design considerations. This course covers specific items on making air conditioning systems perform exceptionally well in California's climate. The speaker, John Proctor, will present the following information:</p>	HVAC; Building Performance	<p>This course is designed for experienced HVAC/mechanical contractors, and building performance consultants.</p>		Seminar	None	PG&E	Stockton--ETC	No fee	Yes	<a href="http://www.pge.com/mybusiness/edusafety/trainin g/pec/classes/index.jsp?reqType=detail&amp;ID=3418&amp;d b=PEC3418.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes">http://www.pge.com/mybusiness/edusafety/trainin g/pec/classes/index.jsp?reqType=detail&amp;ID=3418&amp;d b=PEC3418.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes</a>
Optimizing Air Conditioner Performance in California's Climate	<p>Why California's climate needs something better than the national average air conditioner.</p> <p>How you can get the airflow performance of a premium furnace out of a standard furnace.</p> <p>What adjustments need to be made, what parts need to be replaced, and how to do both to make a superior California air conditioning system.</p> <p>How the air conditioner interacts with the rest of the system.</p>	HVAC; Motors	<p>This class is designed for experienced HVAC technicians.</p>		seminar	None	PG&E	Stockton--ETC	No fee	Yes	<a href="http://www.pge.com/mybusiness/edusafety/trainin g/pec/classes/index.jsp#classresults">http://www.pge.com/mybusiness/edusafety/trainin g/pec/classes/index.jsp#classresults</a>
ACCA Manual J - Equipment Sizing & Selection	<p>It is recommended that participants take this course prior to attending the ACCA Manual D, Advanced ACCA Manual D, and Zoning Design and Beyond classes.</p> <p>This class has been transformed into a computer-based course which will cover the ACCA Manual J Version 8 Load Calculation, and whole house and room-by-room load methods. The instructor will also review the ACCA Manual S Equipment Selection method using manufacturers' data. Special note: Basic computer skills are required for this course (e.g., saving and renaming files, using a mouse to click and drag). North American Technician Excellence (NATE) continuing education credits are available for this course.</p>	HVAC; Title 24	<p>This is an entry level course intended for residential HVAC installers and service technicians. Students should have BASIC COMPUTER SKILLS (e.g., using a mouse, saving files).</p>		workshop	None	PG&E	Stockton--ETC	No fee	Yes	<a href="http://www.pge.com/mybusiness/edusafety/trainin g/pec/classes/index.jsp?reqType=detail&amp;ID=3476&amp;d b=PEC3476.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes">http://www.pge.com/mybusiness/edusafety/trainin g/pec/classes/index.jsp?reqType=detail&amp;ID=3476&amp;d b=PEC3476.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes</a>
Zoning Design and Beyond	<p>This one-day program will build on the content covered in the Equipment Sizing and Selection and the ACCA Manual D Duct Design courses, both of which are prerequisites for this course.</p> <p>Zoned residential heating and cooling systems can improve comfort and save energy, including peak energy, in larger or more complex houses, such as those with multiple stories or sections. Zoning is also an advanced strategy that requires planning and analysis in order to be effective.</p> <p>Participants will learn successful ways to solve residential comfort and energy problems using zoned HVAC systems in both new and existing single-family and multifamily homes. Course content includes Title 24 credit for zoning, types of zoning hardware, and real world examples of zoning solutions that work. The instructor will also cover stratification, problem-solving, and other advanced issues not addressed in prerequisite classes.</p>	HVAC; Title 24	<p>HVAC personnel with at least six months to one year of experience in designing and/or installing residential duct systems will find the course extremely valuable.</p>	Residential	Seminar	North American Technician Excellence (NATE) credits availa	PG&E	Stockton--ETC	No fee	Yes	<a href="http://www.pge.com/mybusiness/edusafety/trainin g/pec/classes/index.jsp?reqType=detail&amp;ID=3583&amp;d b=PEC3583.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes">http://www.pge.com/mybusiness/edusafety/trainin g/pec/classes/index.jsp?reqType=detail&amp;ID=3583&amp;d b=PEC3583.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes</a>

Title 24 Duct Installation Standards & Diagnostic Testing	<p>This class will provide participants a review of the current Title 24 New Construction Standards for airtight ducts, test and documentation requirements, plus hands-on experience operating duct tester, flow hood, digital manometer, and blower door equipment. The instructor will provide a full explanation of UL181 requirements, approved materials, installation criteria, sealing and testing requirements, and duct installation. Students will receive binders with resource materials.</p> <p>builders, subcontractors, and construction professionals attending this workshop will learn about PG&amp;E's Residential New Construction incentives, as well as solar incentives, connection requirements, and how green building programs tie in to PG&amp;E's programs.</p>	HVAC; Title 24	<p>This is an introductory course intended for residential HVAC installers and service technicians.</p>	seminar	None	PG&E	Stockton--ETC	No fee	Yes	<a href="http://www.pge.com/mybusiness/edusafety/training/pec/classes/index.jsp?reqType=detail&amp;ID=3573&amp;db=PEC3573.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes">http://www.pge.com/mybusiness/edusafety/training/pec/classes/index.jsp?reqType=detail&amp;ID=3573&amp;db=PEC3573.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes</a>	
	<p>Participants will also have an opportunity to hear about the proposed new incentive program design that will take effect later in 2009.</p>										
	<p>Energy Efficiency Incentives - PG&amp;E's Residential New Construction Program has three ways that builders can earn cash incentives.</p> <p>1) The CA ENERGY STAR Performance Method; 2) The New Solar Homes Partnership Performance Method Tier 1 and Tier 2; 3) The Prescriptive Method</p>										
Energy Efficiency and Solar: Key Elements of PG&E's Residential New Construction Program	<p>Solar Requirements and Rebates. Attendees will learn about how solar rebates are tied-in with energy efficiency rebates and requirements. They'll also hear about PG&amp;E's solar connection requirements. Green Building. Attendees will learn ways they may be eligible for PG&amp;E's energy efficiency rebates at the same time they are pursuing green building certification for their projects. Attendees will receive an outline of how the green building requirements and PG&amp;E's incentives work hand-in-hand.</p>		<p>This course provides introductory level information intended for builders, designers, and developers of residential new construction within PG&amp;E's service territory.</p>	Residential	Half-day workshop	None	PG&E	Davis--CA Lighting Tech Center	No fee	Yes	<a href="http://www.pge.com/mybusiness/edusafety/training/pec/classes/index.jsp?reqType=detail&amp;ID=3594&amp;db=PEC3594.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes">http://www.pge.com/mybusiness/edusafety/training/pec/classes/index.jsp?reqType=detail&amp;ID=3594&amp;db=PEC3594.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes</a>
	<p>Builders seeking information on participating in PG&amp;E's program should visit <a href="http://www.pge.com/newhomes">www.pge.com/newhomes</a> or call 1-800-342-7737. For information about the CEC's New Solar Homes Partnership, visit</p>	Incentive Programs									
Lighting Fundamentals	<p>Steve Mesh, Lighting Programs Coordinator for PG&amp;E's Pacific Energy Center, will cover visual experiences of lighting terminology, vision, light and color theory, electric light sources, fixtures, controls, and calculations. This course provides a basic overview of fundamental lighting topics, including some discussion of energy saving lighting techniques.</p>	Lighting	<p>Basic to intermediate level. This class is geared toward professionals in related fields (architects, interior designers, engineers, etc.). It is also useful for electrical and general contractors who install or influence the purchase of lighting equipment. This class does not specifically address residential lighting applications, although some of the fundamental lighting information is useful for those working on residential projects.</p>		Workshop	AIA: 6 (HSW) NCQLP: 6	PG&E	Stockton--ETC	No fee	Yes	<a href="http://www.pge.com/mybusiness/edusafety/training/pec/classes/index.jsp?reqType=detail&amp;ID=3516&amp;db=PEC3516.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes">http://www.pge.com/mybusiness/edusafety/training/pec/classes/index.jsp?reqType=detail&amp;ID=3516&amp;db=PEC3516.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes</a>
LEED and Lighting	<p>Steve Mesh, Lighting Program Coordinator for PG&amp;E's Pacific Energy Center, will cover current LEED-NC lighting requirements and how to verify compliance. LEED requirements for exterior lighting in new construction projects are very specific with regard to trespass, power density, and uplight. The course will include a demonstration of software to enable verification for exterior and interior lighting designs. Steve will review case studies. Attendees will assist in developing interior and exterior lighting schemes that meet LEED requirements for actual projects. The course will focus on commercial and institutional project types. This course will not focus on LEED for Existing Buildings or residential projects; however, attendees are welcome to bring questions about anything related to LEED and lighting design.</p>	Lighting; LEED	<p>Basic to intermediate level. This class will cover LEED-NC (for new construction) only. This class is geared toward professionals in related fields (architects, interior designers, engineers, landscape architects and others). It is also applicable to electrical and general contractors as well as energy consultants. This class is not designed to address residential lighting applications.</p>		Seminar	AIA: 2.5 (HSW) NCQLP: 3	PG&E	Stockton--ETC	No fee	Yes	<a href="http://www.pge.com/mybusiness/edusafety/training/pec/classes/index.jsp?reqType=detail&amp;ID=3509&amp;db=PEC3509.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes">http://www.pge.com/mybusiness/edusafety/training/pec/classes/index.jsp?reqType=detail&amp;ID=3509&amp;db=PEC3509.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes</a>
	<p>PEC Lighting Program Coordinator Steve Mesh will cover current LEED-NC lighting requirements and how to verify compliance. LEED requirements for exterior lighting in new construction projects are very specific with regard to trespass, power density, and uplight. The course will include a demonstration of software to enable verification for exterior and interior lighting designs. We will review case studies. Attendees will assist in developing interior and exterior lighting schemes that meet LEED requirements for actual projects. The course will focus on commercial and institutional project types. This course will not focus on LEED for Existing Buildings or residential projects; however, attendees are welcome to bring questions about anything related to LEED and lighting design.</p>	Lighting; LEED	<p>This class is geared toward professionals in related fields (architects, interior designers, engineers, landscape architects and others). It is also applicable to electrical and general contractors as well as energy consultants. This class is not designed to address residential lighting applications.</p>		Seminar	AIA: 2.5 (Not HSW); NCQLP: 3	PG&E	San Francisco--PEC	No fee	Yes	<a href="http://www.pge.com/mybusiness/edusafety/training/pec/classes/index.jsp?reqType=detail&amp;ID=3433&amp;db=PEC3433.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes">http://www.pge.com/mybusiness/edusafety/training/pec/classes/index.jsp?reqType=detail&amp;ID=3433&amp;db=PEC3433.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes</a>
LEED and Lighting	<p>PEC Lighting Program Coordinator Steve Mesh will cover current LEED-NC lighting requirements and how to verify compliance. LEED requirements for exterior lighting in new construction projects are very specific with regard to trespass, power density, and uplight. The course will include a demonstration of software to enable verification for exterior and interior lighting designs. We will review case studies. Attendees will assist in developing interior and exterior lighting schemes that meet LEED requirements for actual projects. The course will focus on commercial and institutional project types. This course will not focus on LEED for Existing Buildings or residential projects; however, attendees are welcome to bring questions about anything related to LEED and lighting design.</p>	Lighting; LEED	<p>This class is geared toward professionals in related fields (architects, interior designers, engineers, landscape architects and others). It is also applicable to electrical and general contractors as well as energy consultants. This class is not designed to address residential lighting applications.</p>		Seminar	AIA: 2.5 (Not HSW); NCQLP: 3	PG&E	San Francisco--PEC	No fee	Yes	<a href="http://www.pge.com/mybusiness/edusafety/training/pec/classes/index.jsp?reqType=detail&amp;ID=3433&amp;db=PEC3433.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes">http://www.pge.com/mybusiness/edusafety/training/pec/classes/index.jsp?reqType=detail&amp;ID=3433&amp;db=PEC3433.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes</a>

	<p>To help home builders meet California's residential energy code requirements the California Lighting Technology Center (CLTC), with support from California public utilities, developed The Residential Lighting Design Guide, Best Practices and Lighting Design to Help Builders Comply with California's 2005 Title 24 Energy Code. This half-day class describes the research behind the code requirements, upcoming 2008 code changes with special emphasis on emerging energy efficient technologies.</p> <p>The class will include:</p> <ul style="list-style-type: none"> <li>-- an overview of common lighting terminology</li> <li>-- background of the 2008 Title 24 residential lighting code with the focus on changes and additions to the code that will be effective 2009</li> <li>-- information on PG&amp;E's Residential New Construction rebates, and</li> <li>-- introduction and demonstration of the latest energy efficient residential lighting technologies available.</li> </ul> <p>Builders, contractors, designers, and inspectors are encouraged to attend.</p> <p>Prerequisite: General knowledge of the Title 24 residential lighting code.</p>	Lighting; Title 24		Residential	Half-day class	AIA: 3 (HSW)	PG&E	Davis--CA Lighting Tech Center	No fee	Yes	<a href="http://www.pge.com/mybusiness/edusafety/trainin g/pec/classes/index.jsp?reqType=detail&amp;ID=3417&amp;d b=PEC3417.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes">http://www.pge.com/mybusiness/edusafety/trainin g/pec/classes/index.jsp?reqType=detail&amp;ID=3417&amp;d b=PEC3417.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes</a>
Maneuvering Lighting Design Within Title 24, IECC, and ASHRAE 90.1	Lighting energy codes are a necessary part of building energy efficiency enforcement, but many see them as complicated, restrictive, and difficult to use. This seminar, taught by a national expert in lighting energy codes, will include the concepts, theories, loopholes, and how to use the codes to gain the greatest advantage for each project. The presentation will cover the current major codes (the California Title 24 Energy Efficiency Standards; the International Energy Conservation Code--IECC; and the American Society of Heating, Refrigerating and Air-Conditioning Engineers--ASHRAE/Illuminating Engineering Society--IEE Standard 90.1) as well as the pertinent other codes for both interior and exterior lighting in the energy-efficient design of commercial buildings. The instructor will also discuss applicability to available utility rebates, Leadership in Energy and Environmental Design--LEED(TM), and the Energy Policy Act of 2005. Students should plan to consider smart code application and compliance.	Lighting; Title 24		Commercial	Seminar	AIA: 6 (HSW)	PG&E	Stockton--ETC	No fee	Yes	<a href="http://www.pge.com/mybusiness/edusafety/trainin g/pec/classes/index.jsp?reqType=detail&amp;ID=3498&amp;d b=PEC3498.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes">http://www.pge.com/mybusiness/edusafety/trainin g/pec/classes/index.jsp?reqType=detail&amp;ID=3498&amp;d b=PEC3498.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes</a>
Sink or Swim - Keeping up with California's Pool Market and Regulations	Learn what is new in energy-efficient pool products and learn how to comply with California's Title 20 and Title 24 regulations. This class covers best practices in energy-efficient pools and will guide you in marketing energy efficiency to your customers. Get the tools to boost your business, reduce pool costs for your customers, comply with California's regulations, and maintain a clean pool.	Motors; Pools/Spas			Seminar	None	PG&E	San Jose--Pipe Trades	No fee	Yes	<a href="http://www.pge.com/mybusiness/edusafety/trainin g/pec/classes/index.jsp?reqType=detail&amp;ID=3571&amp;d b=PEC3571.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes">http://www.pge.com/mybusiness/edusafety/trainin g/pec/classes/index.jsp?reqType=detail&amp;ID=3571&amp;d b=PEC3571.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes</a>
Sink or Swim - Keeping up with California's Pool Market and Regulations	Learn what is new in energy-efficient pool products and learn how to comply with California's Title 20 and Title 24 regulations. This class covers best practices in energy-efficient pools and will guide you in marketing energy efficiency to your customers. Get the tools to boost your business, reduce pool costs for your customers, comply with California's regulations, and maintain a clean pool.	Motors; Pools/Spas			Seminar	None	PG&E	San Jose--Pipe Trades	No fee	Yes	<a href="http://www.pge.com/mybusiness/edusafety/trainin g/pec/classes/index.jsp?reqType=detail&amp;ID=3571&amp;d b=PEC3571.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes">http://www.pge.com/mybusiness/edusafety/trainin g/pec/classes/index.jsp?reqType=detail&amp;ID=3571&amp;d b=PEC3571.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes</a>
Title 24: New for Refrigerated Warehouses in 2009	In August 2009, Refrigerated Warehouses will be regulated by the California Title 24 Energy Efficiency Code for the first time-- what will this mean for your facility? The instruction will review the Refrigerated Warehouse requirements, how to achieve and exceed the new Standard, what can be done with existing technologies, and some new ideas. Find out about utility incentives and design assistance available when you exceed Title 24 and how to fill out the energy code documents. Explore best practices, case studies, and resultant energy savings. We will also describe how to ensure that design savings are realized through installation, commissioning, and start-up procedures. This class is designed for participants who are actively involved in product sales, design, or construction of refrigerated warehouses and those who already have a working knowledge of industrial refrigeration.	Refrigeration; Title 24		Industrial	Seminar	none	PG&E	Stockton--ETC	No fee	Yes	<a href="http://www.pge.com/mybusiness/edusafety/trainin g/pec/classes/index.jsp?reqType=detail&amp;ID=3605&amp;d b=PEC3605.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes">http://www.pge.com/mybusiness/edusafety/trainin g/pec/classes/index.jsp?reqType=detail&amp;ID=3605&amp;d b=PEC3605.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes</a>
Your Path to Energy Savings - Existing Residential and Small Commercial - An Online Course	While going solar is a great way to power your home with clean, renewable energy, there are steps you can take before and after you install your solar system to maximize your investment and reduce your carbon footprint. It's never too late to start; this Webinar will show you how.	Renewables		Residential; Commercial	webinar	None	PG&E	Internet	No fee	Yes	<a href="http://www.pge.com/mybusiness/edusafety/trainin g/pec/classes/index.jsp?reqType=detail&amp;ID=3672&amp;d b=PEC3672.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes">http://www.pge.com/mybusiness/edusafety/trainin g/pec/classes/index.jsp?reqType=detail&amp;ID=3672&amp;d b=PEC3672.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes</a>
Fuel Cell Technology Overview	Speaker Ron Ishii will provide an overview of stationary fuel cell technologies, including history, development, performance, using examples from residential, commercial, and industrial applications. The primary focus will be on Proton Exchange Membrane (PEM), Phosphoric Acid (PAFC), Molten Carbonate (MCFC), and Solid Oxide (SOFC) fuel cell systems. Mr. Ishii will compare the advantages and disadvantages of various fuel cell power plant design approaches. He will review fuel cell costs and economics along with current research emphases and commercially available products. The course is intended to provide utility customers, contractors, architects, and designers with an overview of fuel cells, their performance, availability, and economics.	Renewables			Seminar	AIA: 6 (HSW)	PG&E	San Francisco--PEC	No fee	Yes	<a href="http://www.pge.com/mybusiness/edusafety/trainin g/pec/classes/index.jsp?reqType=detail&amp;ID=3445&amp;d b=PEC3445.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes">http://www.pge.com/mybusiness/edusafety/trainin g/pec/classes/index.jsp?reqType=detail&amp;ID=3445&amp;d b=PEC3445.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes</a>
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California Solar Initiative Workshop - An Online Course	<p>California has set a goal to create 3,000 megawatts of new, solar-produced electricity by 2017. The CPUC's California Solar Initiative program provides incentives to existing residential and business customers when installing solar systems. This workshop is designed for solar installers and dealers interested in learning more about the CSI Program's application process and requirements.</p> <p>If this is your first time attending, please familiarize yourself with the topics and terminology that will be discussed by reading the most current version of the California Solar Initiative Handbook before attending this workshop. Visit <a href="http://www.gosolarcalifornia.ca.gov/documents/CSI_HANDBOOK.PDF">http://www.gosolarcalifornia.ca.gov/documents/CSI_HANDBOOK.PDF</a> for a copy of the CSI Handbook.</p> <p>There is no cost to attend this workshop, and it will include lunch.</p>	Renewables; Incentive programs; Solar	This workshop is open to everyone but particularly designed for solar installers and dealers interested in learning more about the CSI application process and requirements.	workshop; webinar	None	PG&E	internet; Stockton--ETC; San Francisco--PEC	No fee	Yes	<a href="http://www.pge.com/mybusiness/edusafety/trainin g/pec/classes/index.jsp?reqType=detail&amp;ID=3437&amp;d b=PEC3465.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes">http://www.pge.com/mybusiness/edusafety/trainin g/pec/classes/index.jsp?reqType=detail&amp;ID=3437&amp;d b=PEC3465.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes</a>
Solar Power Basics for Residential Customers	Hear about current market-ready solar power technologies and the key steps necessary to own a solar electric system for your home. Come learn the key factors to ensure a successful project and bring your solar questions.	Renewables; Incentive programs; Solar	This is not an advanced class. This short overview is for residential customers interested in learning the fundamentals of solar power for small grid-tied systems.	Seminar	None	PG&E	San Francisco--PEC	No fee	Yes	<a href="http://www.pge.com/mybusiness/edusafety/trainin g/pec/classes/index.jsp?reqType=detail&amp;ID=3437&amp;d b=PEC3437.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes">http://www.pge.com/mybusiness/edusafety/trainin g/pec/classes/index.jsp?reqType=detail&amp;ID=3437&amp;d b=PEC3437.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes</a>
Solar Power Basics for Residential Customers	Hear about current market-ready solar power technologies and the key steps necessary to own a solar electric system for your home. Come learn the key factors to ensure a successful project and bring your solar questions.	Renewables; Incentive programs; Solar	This is not an advanced class. This short overview is for residential customers interested in learning the fundamentals of solar power for small grid-tied systems.	Seminar	None	PG&E	San Francisco--PEC	No fee	Yes	<a href="http://www.pge.com/mybusiness/edusafety/trainin g/pec/classes/index.jsp?reqType=detail&amp;ID=3437&amp;d b=PEC3437.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes">http://www.pge.com/mybusiness/edusafety/trainin g/pec/classes/index.jsp?reqType=detail&amp;ID=3437&amp;d b=PEC3437.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes</a>
Understanding California Solar Initiative (CSI) Program Statistics - An Online Course	This webinar will cover how to analyze and interpret PG&E's CSI data via PG&E's program statistics Web site. Learn how to quickly and easily pull the data for incentives, capacity, and application numbers.	Renewables; solar	This is an intermediate level webinar geared toward solar contractors, applicants, and anyone with a basic knowledge of the CSI program who wants to learn how to pull data regarding the CSI program and their individual projects.	webinar	None	PG&E	Internet	No fee	Yes	<a href="http://www.pge.com/mybusiness/edusafety/trainin g/pec/classes/index.jsp?reqType=detail&amp;ID=3651&amp;d b=PEC3651.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes">http://www.pge.com/mybusiness/edusafety/trainin g/pec/classes/index.jsp?reqType=detail&amp;ID=3651&amp;d b=PEC3651.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes</a>
PowerClerk Updates - An Online Course	Hear about the latest PowerClerk changes streamlining the California Solar Initiative (CSI) application process.	Renewables; solar	This is a basic level webinar for those who are interested in PowerClerk updates that will help them with their California Solar Initiative (CSI) application process.	webinar	None	PG&E	Internet	No fee	Yes	<a href="http://www.pge.com/mybusiness/edusafety/trainin g/pec/classes/index.jsp?reqType=detail&amp;ID=3666&amp;d b=PEC3666.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes">http://www.pge.com/mybusiness/edusafety/trainin g/pec/classes/index.jsp?reqType=detail&amp;ID=3666&amp;d b=PEC3666.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes</a>
California Solar Initiative (CSI) Handbook- Review Latest Improvements - An Online Course	This webinar will cover the approved changes to the CSI Program Handbook based on recently approved Advice Letters.  We highly recommend that attendees read the CSI Handbook before participating in this webinar.	Renewables; solar	This is an intermediate level webinar geared toward solar contractors, applicants, and others who are interested in learning about the approved changes to the CSI Program Handbook.	webinar	None	PG&E	Internet	No fee	Yes	<a href="http://www.pge.com/mybusiness/edusafety/trainin g/pec/classes/index.jsp?reqType=detail&amp;ID=3649&amp;d b=PEC3649.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes">http://www.pge.com/mybusiness/edusafety/trainin g/pec/classes/index.jsp?reqType=detail&amp;ID=3649&amp;d b=PEC3649.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes</a>
Multifamily Affordable Solar Housing (MASH) and Low Income Workshop - An Online Course	<p>The purpose of this free workshop is to make PG&amp;E customers aware of the portfolio of programs and services available to low income customers. These programs include, but are not limited to, solar incentives as part of the recently launched Multifamily Affordable Solar Housing (MASH) program, energy efficiency rebates, and various financial assistance programs.</p> <p>During the workshop, PG&amp;E staff will take a deep dive into the requirements and benefits associated with each program. Upon leaving the class, guests will have a comprehensive understanding of the resources available to low income customers to help decrease electricity use and costs without increasing monthly household expenses.</p>	Renewables; solar	This is a basic level class and simulcasted online class geared toward Multifamily building owners and tenants, solar contractors, and people interested in low income programs.	webinar	None	PG&E	Internet	No fee	Yes	<a href="http://www.pge.com/mybusiness/edusafety/trainin g/pec/classes/index.jsp?reqType=detail&amp;ID=3658&amp;d b=PEC3658.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes">http://www.pge.com/mybusiness/edusafety/trainin g/pec/classes/index.jsp?reqType=detail&amp;ID=3658&amp;d b=PEC3658.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes</a>
The California Solar Initiative (CSI) and Non-PV - An Online Course	This webinar will cover Non-Photovoltaic (PV) technologies and the requirements necessary to ensure your Non-Photovoltaic (PV) project qualifies for California Solar Initiative (CSI) incentives.	Renewables; solar	This is a basic level webinar for those who would like more information on non-photovoltaic technologies and how to apply for the rebates for qualifying equipment.	webinar	None	PG&E	Internet	No fee	Yes	<a href="http://www.pge.com/mybusiness/edusafety/trainin g/pec/classes/index.jsp?reqType=detail&amp;ID=3656&amp;d b=PEC3656.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes">http://www.pge.com/mybusiness/edusafety/trainin g/pec/classes/index.jsp?reqType=detail&amp;ID=3656&amp;d b=PEC3656.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes</a>
Solar for the Entrepreneur - An Online Course	Become familiar with the resources and certification requirements necessary to start a career in solar energy. Learn about the technologically innovative, high-valued services offered at PG&E's Applied Technology Service center.	Renewables; solar	This is a basic level webinar for those interested in starting a career in solar.	webinar	None	PG&E	Internet	No fee	Yes	<a href="http://www.pge.com/mybusiness/edusafety/trainin g/pec/classes/index.jsp?reqType=detail&amp;ID=3667&amp;d b=PEC3667.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes">http://www.pge.com/mybusiness/edusafety/trainin g/pec/classes/index.jsp?reqType=detail&amp;ID=3667&amp;d b=PEC3667.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes</a>
Self Generation Incentive Program (SGIP) - An Overview and Update - An Online Course	This Webinar is a review of PG&E's Self Generation Incentive Program (SGIP), including the technologies covered, the process, and helpful resources to ensure a streamlined SGIP process	Renewables; solar	This is a basic level Webinar for those interested in learning about the Self Generation Incentive Program (SGIP) and the application process. Solar contractors are particularly encouraged to join this Webinar.	webinar	None	PG&E	Internet	No fee	Yes	<a href="http://www.pge.com/mybusiness/edusafety/trainin g/pec/classes/index.jsp?reqType=detail&amp;ID=3668&amp;d b=PEC3668.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes">http://www.pge.com/mybusiness/edusafety/trainin g/pec/classes/index.jsp?reqType=detail&amp;ID=3668&amp;d b=PEC3668.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes</a>
Your Path to Energy Savings - Residential New Construction - An Online Course	While going solar is a great way to power your home with clean, renewable energy, there are steps you can take before and after you install your solar system to maximize your investment and reduce your carbon footprint. It's never too late to start; this Webinar will show you how.	Renewables; solar	This is a basic level Webinar for Residential New Construction contractors. We will give you building tips regarding what to do before going solar in order to maximize your energy savings for new construction homes.	Residential webinar	None	PG&E	Internet	No fee	Yes	<a href="http://www.pge.com/mybusiness/edusafety/trainin g/pec/classes/index.jsp?reqType=detail&amp;ID=3670&amp;d b=PEC3670.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes">http://www.pge.com/mybusiness/edusafety/trainin g/pec/classes/index.jsp?reqType=detail&amp;ID=3670&amp;d b=PEC3670.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes</a>

New Solar Homes Partnership (NSHP) Program - An Online Course	This webinar will focus on the New Solar Homes Partnership (NSHP) program, including incentives offered, the requirements, the process, and efficient ways to use the Web tool to submit applications.	Renewables; solar	This is a basic level Webinar for general contractors, solar contractors, applicants or those who would like to know more about NSHP and how to apply for the incentives and use the Web tool.	Residential	webinar	None	PG&E	Internet	No fee	Yes	<a href="http://www.pge.com/mybusiness/edusafety/training/pec/classes/index.jsp?reqType=detail&amp;ID=3674&amp;db=PEC3674.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes">http://www.pge.com/mybusiness/edusafety/training/pec/classes/index.jsp?reqType=detail&amp;ID=3674&amp;db=PEC3674.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes</a>
	We will provide an overview of the design, specification, and installation aspects of Solar Water Heating systems for both commercial and residential applications. We will present a wide range of systems from simple residential water heating to combined systems that serve multiple heating loads at commercial facilities. We will cover different system types (open-loop, closed-loop, and drainback), focusing on each system's particular advantages and disadvantages. In addition to an overview of system theory and operation, we will discuss component selection and sizing. The course is intended to provide contractors, architects, and designers with the information necessary to estimate system costs and savings, design and specify systems, and review installation issues that will guarantee proper operation of the system.										
Solar Water Heating Systems - An Online Course	We will discuss the following system types and applications: Residential Domestic Water Heating Residential Combi-Systems (combined water and space heating) Nonresidential Water Heating (e.g., multifamily dwellings, hospitals, laundries) Nonresidential Combi-Systems (e.g., fitness facilities with showers, pools, and spas)	Renewables; solar	Basic level and/or refresher for seasoned professionals in related fields; however, it is highly recommended that participants have a basic understanding of plumbing components and terminology.		webinar	None	PG&E	Internet	No fee	Yes	<a href="http://www.pge.com/mybusiness/edusafety/training/pec/classes/index.jsp?reqType=detail&amp;ID=3674&amp;db=PEC3447.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes">http://www.pge.com/mybusiness/edusafety/training/pec/classes/index.jsp?reqType=detail&amp;ID=3674&amp;db=PEC3447.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes</a>
Solar System Life Maintenance - An Online Course	Now that you have purchased your solar system and are successfully powering your home with clean solar power during times of generation, what do you do next? While solar systems require very low maintenance, there are certain steps you can take to maximize the system's life and output and make the most of your investment. Join PG&E's solar team to review these steps, ask your questions, and discuss helpful resources to ensure your investment is well maintained.	Renewables; Solar	This is a basic level webinar for those who would like to learn more information on how to maintain a photovoltaic (PV) system.		webinar	None	PG&E	Internet	No fee	Yes	<a href="http://www.pge.com/mybusiness/edusafety/training/pec/classes/index.jsp?reqType=detail&amp;ID=3653&amp;db=PEC3653.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes">http://www.pge.com/mybusiness/edusafety/training/pec/classes/index.jsp?reqType=detail&amp;ID=3653&amp;db=PEC3653.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes</a>
Multifamily Affordable Solar Housing (MASH) Program Follow Up and Workforce Opportunities - An Online Course	Join PG&E program managers to discuss the latest updates to the MASH program, including Track 2 grant-style incentives and the green workforce component incorporated in these incentives. Get the latest program update, including the number and capacity of projects installed and the incentives distributed.	Renewables; Solar	This is a basic level webinar, geared toward multifamily building owners and tenants and solar contractors and those who would like an update on the MASH program.		webinar	None	PG&E	Internet	No fee	Yes	<a href="http://www.pge.com/mybusiness/edusafety/training/pec/classes/index.jsp?reqType=detail&amp;ID=3675&amp;db=PEC3675.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes">http://www.pge.com/mybusiness/edusafety/training/pec/classes/index.jsp?reqType=detail&amp;ID=3675&amp;db=PEC3675.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes</a>
Interconnection Process Simplification - An Online Course	This online seminar is an overview of PG&E's Net Energy Metering (NEM) interconnection process. It includes helpful resources and tips to ensure quick turnaround times.	Renewables; Solar	This is a basic-level webinar geared toward solar contractors and anyone interested in learning how to apply or speed up the Net Energy Metering application process.		webinar	None	PG&E	Internet	No fee	Yes	<a href="http://www.pge.com/mybusiness/edusafety/training/pec/classes/index.jsp?reqType=detail&amp;ID=3676&amp;db=PEC3676.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes">http://www.pge.com/mybusiness/edusafety/training/pec/classes/index.jsp?reqType=detail&amp;ID=3676&amp;db=PEC3676.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes</a>
Self Generation Incentive Program (SGIP) - An Overview and Update - An Online Course	This Webinar is a review of PG&E's Self Generation Incentive Program (SGIP), including the technologies covered, the process, and helpful resources to ensure a streamlined SGIP process	Renewables; Solar	This is a basic level Webinar for those interested in learning about the Self Generation Incentive Program (SGIP) and the application process. Solar contractors are particularly encouraged to join this Webinar.		webinar	None	PG&E	Internet	No fee	Yes	<a href="http://www.pge.com/mybusiness/edusafety/training/pec/classes/index.jsp?reqType=detail&amp;ID=3669&amp;db=PEC3669.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes">http://www.pge.com/mybusiness/edusafety/training/pec/classes/index.jsp?reqType=detail&amp;ID=3669&amp;db=PEC3669.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes</a>
Speeding up Your California Solar Initiative (CSI) Application-Reservation Request Form - An Online Course	Join CSI project managers to familiarize yourself with the California Solar Initiative (CSI) Reservation Request Form (RRF) application process to ensure appropriately filled out documents and expedited turnaround times.	Renewables; Solar	This is a basic level webinar geared toward solar contractors, applicants, and anyone interested in learning how to apply or speed up their CSI Reservation Request Form application process.		webinar	None	PG&E	Internet	No fee	Yes	<a href="http://www.pge.com/mybusiness/edusafety/training/pec/classes/index.jsp?reqType=detail&amp;ID=3650&amp;db=PEC3650.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes">http://www.pge.com/mybusiness/edusafety/training/pec/classes/index.jsp?reqType=detail&amp;ID=3650&amp;db=PEC3650.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes</a>
	Our objective in this course is to provide the basic vocabulary, technical, and economic details necessary to understand and evaluate grid-connected photovoltaic (PV) projects from a project manager's and/or owner's perspective. In this introductory course, Pete Shoemaker, Renewables Program Coordinator for the Pacific Energy Center, will provide an overview of the fundamentals of solar electric systems, technically known as photovoltaics. He will discuss the advantages and disadvantages of various PV technologies (monocrystalline, polycrystalline, and thin-film), including module efficiencies and their implications on the space requirements of a project.										
	Pete will provide an overview of criteria for selecting a solar site, PV installation options, and PV system costs and incentives (state and federal). Through project examples, he will present PV installation options for residential and nonresidential projects for systems ranging in size from less than 30 kilowatts (kW) to over 1 megawatt (MW), including roof mounted, ground mounted, building integrated, and PV as public art.										
Basics of Photovoltaic (PV) Systems for Grid-Tied Applications	Please note this class is designed as an introductory class for anyone interested in understanding the basic concepts of PV project evaluation. It is not a hands-on installation class or a PV design/engineering class.	Renewables; solar	Basic level and/or refresher for seasoned professionals in related fields		Seminar	AIA: 6 (HSW)	PG&E	Stockton--ETC	No fee	Yes	<a href="http://www.pge.com/mybusiness/edusafety/training/pec/classes/index.jsp#classresults">http://www.pge.com/mybusiness/edusafety/training/pec/classes/index.jsp#classresults</a>

	Global warming policies are already changing how buildings are built and operated, and renewable energy and energy efficiency technologies are being adopted faster than ever before. Public knowledge and appreciation of this important topic are growing every day.										
	This full-day seminar will cover the California state policies and programs that are creating new and expanded businesses opportunities for energy professionals. The seminar also covers technology and economics about solar (electric and water heating), energy monitoring and smart metering, and the latest heating and cooling options. Participants will learn how energy efficiency programs are created and funded and will take part in a review of residential energy economics. We will review example business models and the various certification and training options available to energy service professionals.	Renewables; Title 24; Commissioning (Cx); Audits; Marketing/Finance; Solar	This class is open to anyone who has an interest in the field of energy efficiency and renewable energy. A basic knowledge of energy concepts would be helpful.								
Energy Careers and Business Opportunities - An Online Course	This fast-paced and entertaining seminar is taught by Liz Merry, a solar industry specialist working in the energy industry since 2001.			webinar	None		PG&E	Internet	No fee	Yes	<a href="http://www.pge.com/mybusiness/edusafety/trainin g/pec/classes/index.jsp?reqType=detail&amp;ID=3637&amp;d b=PEC3637.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes">http://www.pge.com/mybusiness/edusafety/trainin g/pec/classes/index.jsp?reqType=detail&amp;ID=3637&amp;d b=PEC3637.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes</a>
	This advanced class will cover in detail all the issues pertaining to inspecting and permitting of photovoltaic grid-tied systems in all sectors, including commercial, industrial, small business, multifamily, and residential.										
	This advanced workshop is designed for building inspectors, plan checkers, fire officials, PV installers, designers, engineers, and architects who wish to stay current on the latest code compliance issues to help facilitate safe and long-lasting PV systems. Participants will be provided with an intensive overview of the codes and standards that govern small-scale solar electrical generation. The primary focus is on the National Electrical Code (NEC), including the 2005 and 2008 updates to the NEC with a permit and inspection guideline provided to guide jurisdictions. Please note that we will not cover the basics of photovoltaics in this class.	Renewables; Title 24; Commissioning (Cx); Audits; Solar	This advanced workshop is designed for building inspectors, plan checkers, fire officials, PV installers, designers, engineers, and architects already familiar with the basics of photovoltaics.								
Inspecting PV Systems for Code Compliance - An Online Course				webinar	None		PG&E	Internet	No fee	Yes	<a href="http://www.pge.com/mybusiness/edusafety/trainin g/pec/classes/index.jsp?reqType=detail&amp;ID=3499&amp;d b=PEC3499.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes">http://www.pge.com/mybusiness/edusafety/trainin g/pec/classes/index.jsp?reqType=detail&amp;ID=3499&amp;d b=PEC3499.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes</a>
	The Passive House movement began in the United States, continued in Germany and Sweden, spread though Europe, and is now being re-introduced in North America. An underlying principle is that developed countries need to reduce the emissions from space conditioning their homes by at least 90% on average to bring them within sustainable levels. Not only is this goal achievable, but available tools help make it cost-effective.										
	Passive House U.S. sets performance-based limits for maximum heating/cooling load, annual space conditioning demand, and total annual home energy consumption. Building enclosures are so tight and well-insulated that heat recovery ventilation becomes the principal—or only—mechanical system. Electric and water heating loads are small and met by renewable sources. Packages of building measures and retrofit strategies can be developed for any combination of climate, geographic region, and building typology.										
	Join us to hear Katrin Klingenberg, founder and president of the Passive House Institute U.S. (www.passivehouse.us), introduce this timely and revolutionary concept to residential building professionals in northern California. Besides explaining its economic and technical aspects, Katrin will demonstrate Passive House Planning Package (PHPP) software.	Software; Bldg Performance; Bldg Envelope	This class is suitable for all residential building and home improvement professionals but will also be of interest to policy makers; utility personnel; and governmental energy, environmental, and/or housing agencies.								
Positive Net Energy Homes - The Passive House Concept				Seminar	None		PG&E	Auburn--Holiday Inn	No fee	Yes	<a href="http://www.pge.com/mybusiness/edusafety/trainin g/pec/classes/index.jsp?reqType=detail&amp;ID=3557&amp;d b=PEC3557.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes">http://www.pge.com/mybusiness/edusafety/trainin g/pec/classes/index.jsp?reqType=detail&amp;ID=3557&amp;d b=PEC3557.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes</a>
PG&E's Benchmark Your Building Now	During this workshop, we will provide guidance and computers for you to, Enter the building data gathered before this workshop, Benchmark your building and receive your Energy Star Score	Software; Bldg Performance; Bldg Envelope	Building owners, property managers, tenants, and their representatives will benefit from this workshop.	Seminar	None		PG&E	San Francisco--PEC	No fee	Yes	<a href="http://www.pge.com/mybusiness/edusafety/trainin g/pec/classes/index.jsp?reqType=detail&amp;ID=3648&amp;d b=PEC3648.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes">http://www.pge.com/mybusiness/edusafety/trainin g/pec/classes/index.jsp?reqType=detail&amp;ID=3648&amp;d b=PEC3648.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes</a>
PG&E's Benchmark Your Building Now	During this workshop, we will provide guidance and computers for you to, Enter the building data gathered before this workshop, Benchmark your building and receive your Energy Star Score	Software; Bldg Performance; Bldg Envelope	Building owners, property managers, tenants, and their representatives will benefit from this workshop.	Seminar	None		PG&E	San Francisco--PEC	No fee	Yes	<a href="http://www.pge.com/mybusiness/edusafety/trainin g/pec/classes/index.jsp?reqType=detail&amp;ID=3648&amp;d b=PEC3648.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes">http://www.pge.com/mybusiness/edusafety/trainin g/pec/classes/index.jsp?reqType=detail&amp;ID=3648&amp;d b=PEC3648.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes</a>
Energy Efficiency and Solar: Key Elements of PG&E's Residential New Construction Program	Builders, subcontractors, and construction professionals attending this workshop will learn about PG&E's Residential New Construction incentives, as well as solar incentives, connection requirements, and how green building programs tie in to PG&E's programs. Participants will also have an opportunity to hear about the proposed new incentive program design that will take effect later in 2009.	Solar; Incentive Progs	This course provides introductory level information intended for builders, designers, and developers of residential new construction within PG&E's service territory.	Residential	Seminar	None	PG&E	San Francisco--PEC San Jose - Pipe Trades Santa Rosa - Builders Exchange	No fee	Yes	<a href="http://www.pge.com/mybusiness/edusafety/trainin g/pec/classes/index.jsp?reqType=detail&amp;ID=3593&amp;d b=PEC3593.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes">http://www.pge.com/mybusiness/edusafety/trainin g/pec/classes/index.jsp?reqType=detail&amp;ID=3593&amp;d b=PEC3593.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes</a>
Energy Efficiency and Solar: Key Elements of PG&E's Residential New Construction Program	Builders, subcontractors, and construction professionals attending this workshop will learn about PG&E's Residential New Construction incentives, as well as solar incentives, connection requirements, and how green building programs tie in to PG&E's programs. Participants will also have an opportunity to hear about the proposed new incentive program design that will take effect later in 2009.	Solar; Incentive Progs	This course provides introductory level information intended for builders, designers, and developers of residential new construction within PG&E's service territory.	Residential	Seminar	None	PG&E	San Francisco--PEC San Jose - Pipe Trades Santa Rosa - Builders Exchange	No fee	Yes	<a href="http://www.pge.com/mybusiness/edusafety/trainin g/pec/classes/index.jsp?reqType=detail&amp;ID=3593&amp;d b=PEC3593.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes">http://www.pge.com/mybusiness/edusafety/trainin g/pec/classes/index.jsp?reqType=detail&amp;ID=3593&amp;d b=PEC3593.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes</a>
Preview of Title 24 Energy Code Changes for 2009	This course is a preview the Title 24 Energy Code Changes for for 2009. Title 24 code changes adopted in 2008 will be required in 2009. Topics include: Package D fenestration changes; Mechanical Ventilation requirements; Refrigerant charge verification, kitchen lighting changes, duct sealing requirement changes; Package D HVAC requirements; Evaporatively cooled condenser and ice storage system applications; and rating changes for tankless water heaters. In this program we will touch on the most recent skylighting requirements in Title 24 and likely future skylighting standards. We will then discuss how skylights can be retrofitted into existing buildings or designed as part of new construction to greatly reduce electric lighting costs and associated energy. We will also cover lighting controls issues. Case study presentations will include measured data showing energy cost reductions.	Title 24	This course is designed for those with prior knowledge and experience with the Title 24 2005 Energy Code.								
	In this program we will touch on the most recent skylighting requirements in Title 24 and likely future skylighting standards. We will then discuss how skylights can be retrofitted into existing buildings or designed as part of new construction to greatly reduce electric lighting costs and associated energy. We will also cover lighting controls issues. Case study presentations will include measured data showing energy cost reductions.	Title 24	All levels	Seminar	AIA: 3.5 (HSW); NCQLP: 3.5		PG&E	San Francisco--PEC	No fee	Yes	<a href="http://www.pge.com/mybusiness/edusafety/trainin g/pec/classes/index.jsp?reqType=detail&amp;ID=3386&amp;d b=PEC3386.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes">http://www.pge.com/mybusiness/edusafety/trainin g/pec/classes/index.jsp?reqType=detail&amp;ID=3386&amp;d b=PEC3386.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes</a>
Skylighting Existing Nonresidential Buildings											
	In this program we will touch on the most recent skylighting requirements in Title 24 and likely future skylighting standards. We will then discuss how skylights can be retrofitted into existing buildings or designed as part of new construction to greatly reduce electric lighting costs and associated energy. We will also cover lighting controls issues. Case study presentations will include measured data showing energy cost reductions.	Title 24	All levels	Seminar	AIA: 3.5 (HSW); NCQLP: 3.5		PG&E	San Francisco--PEC	No fee	Yes	<a href="http://www.pge.com/mybusiness/edusafety/trainin g/pec/classes/index.jsp?reqType=detail&amp;ID=3386&amp;d b=PEC3386.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes">http://www.pge.com/mybusiness/edusafety/trainin g/pec/classes/index.jsp?reqType=detail&amp;ID=3386&amp;d b=PEC3386.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes</a>

Title 24 2008 Building Envelope Requirements - An Online Course	<p>Martyn Dodd of EnergySoft, LLC will discuss nonresidential building envelope requirements affecting commercial new construction under California's 2008 Title-24 Energy Efficiency Standards, scheduled to take effect August 1, 2009. Attend this program to learn how the latest version of the Standards will affect building envelope design in your nonresidential and high-rise residential projects. Mr. Dodd will highlight aspects of the Standards that are new under the 2008 Standards.</p> <p>Topics slated for discussion include:</p> <ul style="list-style-type: none"> <li>- Time dependent valuation of electricity and gas</li> <li>- Refrigerated warehouses</li> <li>- Prescriptive heat loss/gain equations</li> <li>- Fenestration U-factors for Windows and Skylights</li> <li>- Fenestration Solar Heat Gain Coefficients (SHGC) for Windows and Skylights</li> <li>- Prescriptive limitations on glazing area</li> <li>- Insulation requirements</li> <li>- New and changed Cool Roof requirements</li> <li>- Portable buildings and relocatable classrooms</li> <li>- Revised mandatory Skylight requirements</li> <li>- Revised calculation procedures</li> </ul>	Title 24; Bldg Envelope	This is an intermediate program. Mr. Dodd will cover recent changes to the California Title 24 Energy Standards for nonresidential and high-rise residential buildings. Participants are assumed to have some familiarity with the Title 24 requirements for the building envelope.	Commercial	webinar/seminar	None	PG&E	Internet; Stockton--ETC	No fee	Yes	<a href="http://www.pge.com/mybusiness/edusafety/training/pec/classes/index.jsp?reqType=detail&amp;ID=3469&amp;db=PEC3469.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes">http://www.pge.com/mybusiness/edusafety/training/pec/classes/index.jsp?reqType=detail&amp;ID=3469&amp;db=PEC3469.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes</a>
Quality Insulation Installation and Thermal By-Pass Checklist	<p>The insulating value of a wall assembly is significantly degraded by air flowing through or around the insulation, which occurs whenever there are gaps, voids or compression of the insulation; when the air barrier is not continuous; and when the insulation is not in contact with the air barrier. Quality Insulation Installation (QII) criteria are designed to ensure an effective thermal barrier, and the Energy Star Homes Thermal Bypass Checklist is designed to ensure an effective air barrier. Both are required in new Energy Star homes, and Title 24 offers compliance credit for QII.</p> <p>This full-day class is for home builders and insulation contractors who want to earn compliance credit for Quality Insulation Installation (QII), and HERS raters who inspect and verify that QII and Thermal Bypass Checklist criteria have been achieved. The issues and techniques discussed in this class apply to new low-rise wood-framed homes insulated with batt or blown fiberglass or cellulose.</p> <p>The multifamily buildings--high performance energy design workshop series is made up of two courses: 1) A comprehensive energy efficiency overview workshop on March 30, 2009, in San Francisco and 2) An advanced level hands-on building simulation training on June 8, 2009, in Stockton.</p>	Title 24; Bldg Envelope	This full-day class is for home builders and insulation installers who want to earn Title 24 compliance credit for Quality Insulation Installation, and for HERS raters who inspect and verify that QII and Thermal Bypass Checklist criteria have been achieved in new homes.		Seminar	compliance credit for Quality Insulation Installation (QII)	PG&E	Stockton--ETC	No fee	Yes	<a href="http://www.pge.com/mybusiness/edusafety/training/pec/classes/index.jsp?reqType=detail&amp;ID=3565&amp;db=PEC3565.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes">http://www.pge.com/mybusiness/edusafety/training/pec/classes/index.jsp?reqType=detail&amp;ID=3565&amp;db=PEC3565.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes</a>
	<p>To register for the Advanced Building Simulation Training in Stockton, go to this Web address:  <a href="http://www.h-m-g.com/multifamily/training/">http://www.h-m-g.com/multifamily/training/</a></p> <p>The Advanced Building Simulation Training builds on the comprehensive workshop session by delving further into multifamily building performance issues. Using the EnergyPro software program, attendees will participate in a hands-on learning experience that includes multiple cost-effective energy efficiency design scenarios in multifamily projects. Plans and energy models from real projects will be loaded onto laptops for attendees to explore energy efficiency options in a small group setting. Attendees will also use a cost/benefit spreadsheet to compare the impact of each option. Prior attendance at the comprehensive workshop is recommended, and prior experience with Title 24 documentation and use of the EnergyPro software program is required.</p>										
Multifamily Buildings: High Performance Energy Design Advanced Building Simulation Training	<p>Workshop topics will include:</p> <ul style="list-style-type: none"> <li>- Using the latest tools and design practices to maximize energy efficiency cost-effectively when designing multifamily projects</li> <li>- Identifying measures to meet the minimum building energy code requirements, analyzing the difference between these features and Title 24 Prescriptive Package D, and understanding where to find performance data on building equipment</li> <li>- Analyzing the energy impacts of individual measures for specific climate zones.</li> <li>- Learning how to incorporate multiple measures via the "whole building" approach to achieve at least 15-20% energy efficiency savings beyond code minimums</li> </ul>	Title 24; Software; Bldg Performance	This is an Advanced training. Previous experience with Title 24 documentation and EnergyPro simulation software is required and previous attendance of the Multifamily Buildings: High Performance Energy Design, Comprehensive Workshop is recommended.		Workshop	None	PG&E	Stockton--ETC	No fee	Yes	<a href="http://www.pge.com/mybusiness/edusafety/training/pec/classes/index.jsp?reqType=detail&amp;ID=3635&amp;db=PEC3635.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes">http://www.pge.com/mybusiness/edusafety/training/pec/classes/index.jsp?reqType=detail&amp;ID=3635&amp;db=PEC3635.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes</a>
Greening the Plumbing in Your Home and Business	<p>Water heating is the second or third largest portion of a residential energy bill, and it represents roughly 38% of the natural gas used in both residential and commercial applications in California. In this seminar, we will discuss the importance of the water-energy connection--roughly 19% of the state's electricity, 33% of natural gas, and a bunch of diesel is used to move, treat, pressurize, or heat water. Attendees will learn how to heat and deliver hot water most efficiently for both new construction and retrofit. We will also show you how to deliver hot water to every fixture, wasting no more than 1 cup while waiting no more than 5 seconds. In addition the application options of tank and tankless water heaters, both gas and electric are covered. You will come away with innovative, practical, and cost-effective applications that you can start using immediately to increase customer satisfaction while dramatically reducing energy and water waste and their associated costs.</p>	Water and Energy	Newer designs in water transport and heating can dramatically reduce installation and energy costs. For builders, plumbers, architects or anyone interested in improving water efficiencies.		Full-day seminar	None	PG&E	Sacramento--CFM	No fee	Yes	<a href="http://www.pge.com/mybusiness/edusafety/training/pec/classes/index.jsp?reqType=detail&amp;ID=3634&amp;db=PEC3634.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes">http://www.pge.com/mybusiness/edusafety/training/pec/classes/index.jsp?reqType=detail&amp;ID=3634&amp;db=PEC3634.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes</a>
BOMA BEEP Seminar 4: No-Cost and Low-Cost Operational Adjustments to Improve Energy Performance - An Online Course	<p>In this class we will present best practices for operations and maintenance measures to improve the energy efficiency of commercial real estate without capital expenditures. We will focus on the financial impact of no-cost and low-cost adjustments and review how to use tools such as data loggers and metering to identify and verify improvement opportunities.</p>	Building Performance; Controls	This course is designed for building managers, building engineers, and others who are concerned with commercial building energy performance.		seminar/webinar	None	PG&E and BOM PEC	Internet; San Francisco--		BOMA me Yes	<a href="http://www.pge.com/mybusiness/edusafety/training/pec/classes/index.jsp?reqType=detail&amp;ID=3618&amp;db=PEC3618.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes">http://www.pge.com/mybusiness/edusafety/training/pec/classes/index.jsp?reqType=detail&amp;ID=3618&amp;db=PEC3618.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes</a>

BOMA BEEP Seminar 5: Valuing Energy Enhancement Projects and Financial Returns - An Online Course	<p>In this class, we will examine the use of financial metrics and tools to calculate and sell enhancement projects to owners, asset managers, and tenants by highlighting the positive financial and environmental impacts of improved energy performance. Students will learn how to put energy efficiency in the context of "what's important" to financial decision-makers.</p> <p>In this essential course, we present the key components of an energy awareness program for tenants, owners, brokers, and asset managers. The training focuses on how to create an effective awareness program and communicate accomplishments and benefits to key stakeholders and provides samples and templates for attendees to easily customize.</p> <p>Upon successfully completing this seminar, attendees will be able to:</p> <ul style="list-style-type: none"><li>- Create an energy awareness program and maximize communications efforts.</li><li>- Create a compelling case study and success stories.</li><li>- Educate owners, tenants, brokers, leasing, and sales staff about the benefits of improved energy performance.</li></ul>	Marketing; Finance	This course is designed for building managers and engineers at all levels.	webinar/seminar	None		Internet; San Francisco-- PG&E and BOM PEC	BOMA me	Yes	<a href="http://www.pge.com/mybusiness/edusafety/training/pec/classes/index.jsp?reqType=detail&amp;ID=3617&amp;db=PEC3617.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes">http://www.pge.com/mybusiness/edusafety/training/pec/classes/index.jsp?reqType=detail&amp;ID=3617&amp;db=PEC3617.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes</a>	
BOMA BEEP Seminar 6: Building an Energy Awareness Program - An Online Course		Marketing; Finance	This course is designed for building managers and engineers at all levels.	webinar/Seminar	None		Internet; San Francisco-- PG&E and BOM PEC	BOMA me	Yes	<a href="http://www.pge.com/mybusiness/edusafety/training/pec/classes/index.jsp?reqType=detail&amp;ID=3616&amp;db=PEC3616.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes">http://www.pge.com/mybusiness/edusafety/training/pec/classes/index.jsp?reqType=detail&amp;ID=3616&amp;db=PEC3616.csv&amp;pageTitle=Class%20Details%20and%20Registration&amp;postback=yes</a>	
Green Building for Building Professionals	During the Green Building for Building Professionals workshop, which is a required course for the National Association of Home Builder's Certified Green Professional designation, Ted Clifton will discuss strategies for incorporating green building principles into homes without driving up the cost of construction. Participants will learn how green homes provide buyers lower maintenance, improved indoor air quality, and better long term value. Techniques for competitively differentiating your home products with increased indoor environmental quality as well as energy and resource efficiency will also be covered. For more information or to register, please go to <a href="http://www.northstatebia.org">www.northstatebia.org</a> or call (916) 751~2740.	Building Envelope	Architects, engineers, builders, energy consultants	workshop	Required for National Association of Home Builder's Certified Green Professional	SMUD	Sacramento	\$150	Yes	<a href="http://www.northstatebia.org">www.northstatebia.org</a>	
Regenerative Design: Not Your Everyday Green Building	Bill Reed, an architect president of the Integrative Design Collaborative and one of the original founders of the U.S. Green Building Council, will present his philosophy of regenerative building design and demonstrate his ideas with supporting project examples. This presentation will provide insight into how integrative, whole-system design can improve the overall quality of the physical, social, and spiritual life of our living places.	Building Envelope	Architects, engineers, builders, energy consultants	workshop	None	SMUD	Sacramento	No fee	Yes		
Green Building Operations and Maintenance: The LEED Implementation Process 2009	The Leadership for Energy & Environmental Design for Existing Buildings: Operations & Maintenance (LEED-EBOM) Rating System helps building owners and operators measure operations, improvements, and maintenance on a consistent scale, with the goal of maximizing operational efficiency while minimizing environmental impacts. This workshop, intended for building owners, operators and maintenance professionals involved in implementing the LEED for Existing Buildings: Operations & Maintenance, walks through the phases of a typical project, using case examples and implementation strategies throughout to reinforce learning while encouraging students to apply knowledge to real-life situations. This workshop will cover the new 2009 version of the rating system in support of the LEED-EB 2009 examination that is due for release spring 2009.	Building Performance	building owners, operators and maintenance professionals involved in implementing the LEED for existing buildings	Seminar	None	SMUD	Sacramento	\$445.00	Yes	<a href="https://usage.smud.org/yourAccount/ETCstudent/ClassDescription.asp?id=505">https://usage.smud.org/yourAccount/ETCstudent/ClassDescription.asp?id=505</a>	
Build It Green's Certified Green Building Professional Training	As green building becomes more popular, homeowners and those purchasing homes are looking for contractors, architects, engineers who are qualified to provide green building services. Build It Green's Certified Green Building Professional Training will help you establish yourself in this profitable niche and distinguish yourself from your competitors. This course is followed by a written, certification exam.	Building Performance	contractors, architects, engineers	two-day workshop	None	SMUD	Sacramento	\$450.00	Yes	<a href="https://usage.smud.org/yourAccount/ETCstudent/ClassDescription.asp?id=491">https://usage.smud.org/yourAccount/ETCstudent/ClassDescription.asp?id=491</a>	
Energy Efficiently and Cost Effectively Cooling Your Home	SMUD Energy Specialists will provide information about your home's energy efficiency possibilities and recommend strategies to help you keep cool during the hot Sacramento summer. Topics will include cooling and ventilation equipment, insulation, shading, and basic maintenance.	Building Performance	Homeowners	Residential	seminar	None	SMUD	Sacramento	No fee	Yes	<a href="https://usage.smud.org/yourAccount/ETCstudent/ClassDescription.asp?id=513">https://usage.smud.org/yourAccount/ETCstudent/ClassDescription.asp?id=513</a>
Museum Lighting	Illuminating museum quality paintings and sculptures is an art unto itself. Frank Florentine, LC, a Lighting Designer with the Smithsonian National Air and Space Museum, will discuss up-to-date lighting methods for displaying such pieces. Issues addressed will include UV and heat, aiming angles, illuminance intensities, color temperatures, and choosing the correct lamps, including energy efficient lamps, for specific applications.	Building Performance		Commercial	seminar	None	SMUD	Sacramento	No fee	Yes	
How Do LEDs Compare with Other High Performance Lighting Technologies?	Please come listen and learn as a panel consisting of representatives from 1st Source Lighting, Beta/Kramer Lighting, and Pacific Northwest National Laboratory discusses how LEDs compare with high performance T8, induction, ceramic metal halide and CFLs in streets, parking lots, garages, warehouses, offices, stores, and homes. Stan Walerczyk will be the moderator. The latest high performance technologies from numerous manufacturers also will be on exhibit.	Building Performance			seminar	None	SMUD	Sacramento	No fee	Yes	
Historical Lighting	Paul and Kim Mercier will present design approaches to historical lighting. Learn about actual case studies they have been involved with, as well as information regarding construction administration, red-tape, hurdles, and barriers to avoid.	Building Performance			seminar	None	SMUD	Sacramento	No fee	Yes	
Building Operator Certification - Level 1	The effective practice of building operations and maintenance requires in-depth knowledge and experience in a wide variety of subjects. Building Operator Certification (BOC) is a competency-based training and certification for building operators offering improved job skills and more comfortable, efficient facilities. Operators earn certification by successful completion of training in a BOC Level I course series, class exams, and on-the-job projects. BOC certification provides a credential for professional development, improves the professionalism of facility departments, saves money by improving the energy efficiency of heating and cooling systems, and enables operators to be proactive in compliance with environmental regulations affecting facility operations and maintenance.	Building performance		workshop	None	SMUD	Sacramento	No fee	Yes		

Designing with Light for Your Home	Come and learn about the many ways to light your home while improving its look, feel, and energy efficiency! During this evening class, SMUD's Lighting Specialist will cover general types of lighting in addition to specific lighting tools and tricks for different rooms in a home.	Building performance; Daylighting	Homeowners	Residential	seminar	None	SMUD	Sacramento	No fee	Yes	
GEMS® Teacher Workshop: Global Warming and Hot Water, Warm Homes (Grades 6-12)	Presenter Robert Sherriff, an experienced GEMS instructor, will present two complementary themed units that support exploration of global warming. Teachers will learn about the chemistry of greenhouse gases and the scientific evidence behind the complicated phenomenon of global warming. Solar power is also examined as teachers learn how to build and study model houses and home water heaters in order to encourage their students to understand and appreciate the nature of this powerful alternative energy.	Climate and Environment	Educators (6-12)		workshop	None	SMUD	Sacramento	No fee	Yes	<a href="https://usage.smud.org/yourAccount/ETCstudent/ClassDescription.asp?id=519">https://usage.smud.org/yourAccount/ETCstudent/CassDescription.asp?id=519</a>
Advanced Management of Compressed Air Systems	This advanced course in compressed air system management, presented by Frank Moskowitz and Tom Taranto, teaches you to develop a system profile and address point-of-use issues, how to implement a compressed air system maintenance program, determine different compressor control strategies, align the supply-side to demand-side operation, and gain an understanding of the value of heat recovery. Participants will also gain knowledge on how to successfully present project proposals to management. This US Department of Energy Best Practices class is brought to you through collaboration with the California Energy Commission and hosted by SMUD.	Controls	architects, builders, engineers		two-day workshop	None	SMUD	Sacramento	No fee	Yes	<a href="https://usage.smud.org/yourAccount/ETCstudent/CassDescription.asp?id=511">https://usage.smud.org/yourAccount/ETCstudent/CassDescription.asp?id=511</a>
Energy Efficiency for Business Technology	Information technology is growing in importance and energy consumption, no matter the size of your business. Significant opportunities are available to improve computational energy efficiency, as well as the efficiency of the infrastructure that provides power and cooling to the computer equipment. This workshop, presented by Mark Hydeman, P.E., Peter Rumsey, P.E., William Tschudi, P.E., and Mark Bramfitt, P.E., will provide state-of-the-art strategies to improve energy performance for technology driven portions of your business, including procurement practices, server virtualization, power management, and HVAC equipment optimization. The workshop includes a technology fair where vendors and suppliers will be able to provide information and answer questions.	Controls			workshop	None	SMUD	Sacramento	No fee	Yes	
Fundamentals of Compressed Air Systems	Find out how a compressed air system works and the benefits of optimal compressed air system performance. This initial class, taught by Frank Moskowitz, demonstrates how to compute the current cost of your plant's compressed air systems, how to measure and create a baseline of system performance, and how to determine the impact of different compressor control types. Learn basic approaches for cutting costs, identify steps for proper system operation, maintenance, and point-of-use accountability, and tailor a compressed air system management action plan for your plant. This US Department of Energy Best Practices class is brought to you through collaboration with the California Energy Commission and hosted by SMUD.	Controls; HVAC			seminar	None	SMUD	Sacramento	No fee	Yes	
Daylight Harvesting	Designed for architects, daylighting consultants and other lighting professionals, David Weigand will give an overview of daylight harvesting and how to maximize energy savings with this lighting control strategy. Attendees will learn how to define daylight harvesting benefits, understand daylight harvesting design control considerations along with its components, and determine applications for daylight harvesting controls.	Daylighting	Designed for architects, daylighting consultants and other lighting professionals		seminar	None	SMUD	Sacramento	No fee	Yes	
Lean Standard Work	Standard Work is a Lean concept that is a cornerstone for companies that want to improve their processes, stabilize a task or activity, and provide an opportunity to reduce wasteful activities. David Jones will use hands-on simulations to show attendees how to use tools such as Standard Work Layouts and Standard Work Combination Sheets and how to develop a Standard Work Operations Display. Also covered will be the concept of Leader Standard Work which sustains the benefits of Standard Work and becomes a platform for process improvements.	Energy Basics	business owners and managers	Small Business	workshop	None	SMUD	Sacramento	No fee	Yes	<a href="https://usage.smud.org/yourAccount/ETCstudent/CassDescription.asp?id=510">https://usage.smud.org/yourAccount/ETCstudent/CassDescription.asp?id=510</a>
ABs, SBs, and Codes: How Energy, Carbon, and Water Legislation Impact the Building Industry	It seems every week you hear about another energy or environmental policy that is going to change the way we design and build communities and buildings: zero-net energy buildings, climate change, water efficiency, sprawl control, green building code and more. It can be a struggle just to keep up with the changes, understanding how they work together, and their potential impact on the design and construction community. This half-day workshop will cover the most pertinent polices that have been adopted or are being considered for the building community. Come hear from experts in government and the private sector discuss the best ways to integrate these policies early into your business plan.	Energy Basics			workshop	None	SMUD	Sacramento	No fee	Yes	
Teacher Workshop: Using the Internet to Enhance Your Science Curriculum (Grades 7-12)	Sarah DiRuscio will teach participants practical strategies and techniques for enhancing, enriching, and extending science curriculum by making the best use of the Internet. This workshop will include ways to create and utilize a classroom website and incorporate easy to use activities and science lessons designed specifically to support earth, physical, and life science curriculum, emphasizing sustainability concepts.	Energy Basics	Educators	Education	workshop	None	SMUD	Sacramento	No fee	Yes	
GEMS® Teacher Workshop: Energy and Me! And Matter (Grades K-3)	This new workshop presented Linda Desai and Bob Bachmeier is designed to meet the needs of teachers in grades K-3 as they introduce young students to energy topics. Teachers will also get practical examples and curriculum to help students grasp the difficult concept of states of matter.	Energy Basics	Educators	Education	workshop	None	SMUD	Sacramento	No fee	Yes	
GEMS® Teacher Workshop: Build It! And The Mystery Festival (Grades 3-8) April 25, 2009	In this workshop, science duo Michelle and Eric Bull present two ways to integrate science and math into curriculum by teaching educators tools to host a science/math family night. With Build-It!, teachers will learn how to present a wide assortment of classroom learning station activities that emphasize construction, geometric challenges, and spatial visualization. With the Mystery Festival, teachers help to create learning stations for students to understand the experimentation procedures, logical thinking, and real life connections to math and science which are necessary to explore careers in science, technology, engineering and math (STEM).	Energy Basics	Educators	Education	workshop	None	SMUD	Sacramento	No fee	Yes	
Introduction to Lean	David Jones will discuss Lean concepts that focus on reducing or eliminating waste and non-value-added activities, by using techniques that allow businesses to produce more with existing resources. In order to more strategically place their businesses in stronger positions to compete in today's global marketplace, attendees will learn how to focus their valuable resources on improving three key metrics: quality, delivery, and cost. Also, they will see first-hand how to improve quality, reduce cycle time, improve delivery performance and reduce work-in-progress (WIP) up to 90%.	Energy Basics; Building Performance			seminar	None	SMUD	Sacramento	No fee	Yes	



Lean Value Stream Mapping	Value Stream Mapping is a tool that gives a true graphic picture of a business organization including the processes and information flows. In this class, David Jones will demonstrate how to use Value Stream Mapping to identify lead times and system bottlenecks and to explain the impacts of downtime and product changeover.	Energy Basics; Building Performance		seminar	None		SMUD	Sacramento	No fee	Yes	
ACCA Manual D Training Class	ACCA (Air Conditioning Contractors of America) Manual D is the industry standard method for the design and sizing of residential heating and cooling duct systems, both for new construction and to improve the performance of existing systems. The class will focus on determining accurate duct design, sizing supply ducts based on the load for each room, and providing comfortable temperature throughout the house. The class will also include supply and return register selection and placement. Gary Wollin will teach attendees how to perform a Manual D duct design by hand and will demonstrate Manual D computer software.	HVAC	Residential	workshop	None		SMUD	Sacramento	No fee	Yes	
Economizer Operations, Maintenance and Commissioning – Optimizing Your HVAC System	The proper operation of an HVAC system's economizer can significantly reduce a building's cooling requirements during the day and positively impact its energy usage, indoor environmental quality, and operational costs. This class will focus on the operations and maintenance of economizers, how they work, establishing operational set points, and the best practices for maintenance to ensure correct operations. David Sellers, P.E., will also cover commissioning a system economizer, how it plays into a typical construction process and acceptance testing, and what benefits it has securing LEED points.	HVAC		workshop	None		SMUD	Sacramento	No fee	Yes	
HVAC Controls for the 21st Century	This class, presented by Gary Van Winkle and Bill Sherbert, will provide you with control solutions for a number of situations, including HVAC building retrofits, lighting controls, landscaping controls, waste water management controls, wireless technology, and integration for Smart Buildings. This class will review the advances in open protocol communications and IT technologies and will also include an examination of control opportunities for points for LEED for Existing Buildings: Operations and Maintenance 2009.	HVAC; Building Performance	building and home owners	seminar	None		SMUD	Sacramento	No fee	Yes	<a href="https://usage.smud.org/yourAccount/ETCstudent/ClassDescription.asp?id=504">https://usage.smud.org/yourAccount/ETCstudent/CClassDescription.asp?id=504</a>
LEED for New Construction Exam Preparation	This full-day LEED NCv2.2 Exam Preparation Workshop designed to prepare you pass the test with confidence - the first time. The workshop will focus on key information necessary to pass the LEED exam, including: credit intents, requirements and submittals; project team coordination; LEED implementation & LEED Online; technical credit analysis; and test taking tips and strategies. In addition to delivering the material in a clear and concise format, this workshop presents the types of questions that are asked on the exam so you know what and how to study. The course will provide example scenarios from real world projects to help you better understand the material while giving you an opportunity to put the concepts to practice.	LEED	Architects, engineers, builders, energy consultants	Workshop	prep for LEED certification exam		SMUD	Sacramento	Fees apply, see <a href="http://www.usgbc-ncc.org">www.usgbc-ncc.org</a>	Yes	
Uncovering LEED 2009	Elaine Aye and Brian Sehnert will offer an overview and analysis into the green building movement, focusing specifically on upcoming changes to the US Green Building Council's LEED (Leadership in Energy & Environmental Design) Version 3 and highlights of significant changes to the LEED 2009 Rating Systems. This seminar will also cover the changes to the professional accreditation process, including new requirements for examinations, professional credentialing, and the new criteria for maintaining LEED Accredited Professional status. This informative session will help you improve your understanding of what is coming and what impacts these changes will have on your future projects.	LEED		seminar	None		SMUD	Sacramento	No fee	Yes	
Energy Efficiency for Commercial Refrigeration Systems	From grocery store refrigeration and freezer cases to walk-in and drive-through coolers and freezers, refrigeration systems are important in everyone's lives. This class, presented by Jim Kelsey, P.E., will focus on refrigeration systems operation and maintenance. Included will be a discussion of typical equipment types and low-cost and capital investment measures one can take to improve refrigeration energy efficiency. Also covered will be an overview of energy cost saving evaluation and calculation methods.	Refridgeration	business owners, commercial building owners	Commercial	workshop	None	SMUD	Sacramento	No fee	Yes	<a href="https://usage.smud.org/yourAccount/ETCstudent/CClassDescription.asp?id=509">https://usage.smud.org/yourAccount/ETCstudent/CClassDescription.asp?id=509</a>
Introductory MICROPAS	MICROPAS is an energy modeling software tool for residential new construction. This hands-on workshop, presented by Ken Nitler, P.E., will cover the basics of the energy code, software usage instructions, drawing meaningful information from plans and specifications, and understanding compliance documentation.	Software	Architects, engineers, builders, energy consultants	Residential	workshop	None	SMUD	Sacramento	No fee	Yes	<a href="https://usage.smud.org/yourAccount/ETCstudent/CClassDescription.asp?id=493">https://usage.smud.org/yourAccount/ETCstudent/CClassDescription.asp?id=493</a>
Intermediate MICROPAS	This lecture class is intended for intermediate MICROPAS software users who are seeking to refine their skills. In the class, Ken Nitler, P.E., will cover the following areas: review of all inputs, work example for residential new construction, work example for a residential addition, plan checking, and an overview of the 2008 Residential Energy Efficiency Standards. (Lecture only)	Software	Architects, engineers, builders	Residential	seminar	None	SMUD	Sacramento	No fee	Yes	<a href="https://usage.smud.org/yourAccount/ETCstudent/CClassDescription.asp?id=494">https://usage.smud.org/yourAccount/ETCstudent/CClassDescription.asp?id=494</a>
Solar Schoolhouse Primer: Workshop for Educators (Grades 4-12)	In this workshop, Tor Allen and Dr. Hal Aronson from the Rahus Institute will show you how to easily integrate solar energy into your existing curriculum in order to teach your students the value of using renewable energy sources. You will receive hands-on classroom activities correlated to the California content standards, a teacher guide, and solar science supplies, as well as first-hand experience building a solar cooker and a solar powered whirligig for your classroom.	Solar	Educators (grades 4-12)		workshop	None	SMUD	Sacramento	No fee	Yes	<a href="https://usage.smud.org/yourAccount/ETCstudent/CClassDescription.asp?id=518">https://usage.smud.org/yourAccount/ETCstudent/CClassDescription.asp?id=518</a>
Solar Schoolhouse Teacher Workshop – How to Build a Solar Race Car (Grades 9-12)	Tor Allen and Hal Aaronson of the Solar Schoolhouse will show you how to bring engineering and solar technology into your curriculum by designing and building solar cars. This workshop will provide you information and resources to encourage high school students to design and build race cars to compete in the SMUD sponsored Solar Car Derby held later in the spring at American River College.	Solar	Educators	Education	workshop	None	SMUD	Sacramento	No fee	Yes	
2008 Title 24 – Nonresidential Lighting Overview	During this seminar Martyn Dodd will provide information on lighting as it relates to Title 24 Energy Efficiency Standards for Nonresidential Buildings, which are scheduled to take effect August 2009. Changes that will be discussed include: controls and their shut-off requirements, demand response, dimmable ballasts, signage lighting controls, LEDs, daylight areas, reduction in lighting power density for the complete building method, area category method, tailored method, and outdoor lighting.	Title 24	Architects, engineers, builders, energy consultants	Commercial	seminar	None	SMUD	Sacramento	No fee	Yes	<a href="https://usage.smud.org/yourAccount/ETCstudent/CClassDescription.asp?id=500">https://usage.smud.org/yourAccount/ETCstudent/CClassDescription.asp?id=500</a>

EnergyPro - Introduction	EnergyPro is a comprehensive energy analysis program that performs multiple calculations and energy modeling for California Title 24 energy analysis of buildings, including both prescriptive and performance based approaches. This course, presented by Martyn Dodd, covers the EnergyPro software as it pertains to Title 24 Energy Code compliance documentation. Topics include basic program operation and inputs, the Residential Wizard (for the residential session) and changes to the 2008 Title 24 Energy Code. Attendees must bring a laptop to class and will be provided a tutorial version of EnergyPro; computers will not be provided.	Title 24	Architects, engineers, builders, energy consultants	workshop	None	SMUD	Sacramento	No fee	Yes	
EnergyPro – Advanced	This course is for experienced users of EnergyPro who are looking to enhance their ability to prepare Title 24 Energy Code compliance documentation. Martyn Dodd will cover calculations and energy modeling for both prescriptive and performance based approaches to energy analysis and will include updates to the 2008 Title 24 Energy Code. Attendees must bring a laptop to class and will be provided a tutorial version of EnergyPro; computers will not be provided.	Title 24		workshop	None	SMUD	Sacramento	No fee	Yes	
Lighting Control Update to Title 24	Charles Knuffke will explain in plain language lighting updates to the new Title 24 Building Energy Efficiency Standards, specifically focusing on lighting controls. Please join us and share your lighting control questions during this interesting explanation of what is new.	Title 24		seminar	None	SMUD	Sacramento	No fee	Yes	
Economizer Operations, Maintenance and Commissioning – Optimizing Your HVAC System	The proper operation of an HVAC system’s economizer can significantly reduce a building’s cooling requirements during the day and positively impact its energy usage, indoor environmental quality, and operational costs. This class will focus on the operations and maintenance of economizers, how they work, establishing operational set points, and the best practices for maintenance to ensure correct operations. David Sellers, P.E., will also cover commissioning a system economizer, how it plays into a typical construction process and acceptance testing, and what benefits it has securing LEED points.	Water and Energy		Seminar	None	SMUD	Sacramento	No fee	Yes	<a href="https://usage.smud.org/yourAccount/ETCstudent/ClassDescription.asp?id=503">https://usage.smud.org/yourAccount/ETCstudent/ClassDescription.asp?id=503</a>

Course Title	Course Description	Program	Topic Area(s)	Target Audience	Market Sector (if applicable)	Type (Seminar, Certification, College Class, etc.)	Course Units and Type, if applicable	Offered By	Location	Cost	Available Now? If no, list start date:	Website, and/or additional info
ENERGY 303 Energy and Sustainability	Fundamentals of energy and its impact on society and the environment are covered in this course. The mechanics, advantages and disadvantages of current and future renewable, green and nonrenewable energy sources are investigated. Residential energy audits are covered. Field trips are required. This course is not open to students who have completed ET 303 or NATR 303.	Energy Program	Renewables; Solar	Students preparing for a career in solar/PV installation.		College class	3 Units	American River College	Sacramento	\$20/unit	Yes	<a href="http://web.arc.losrios.edu/catalog0910/Energy.pdf">http://web.arc.losrios.edu/catalog0910/Energy.pdf</a>
ENERGY 142 NABCEP (North American Board of Certified Energy Practitioners) Entry Level Test Review	This advanced course in solar photovoltaic (PV) energy offers preparation for the North American Board of Certified Energy Practitioners (NABCEP) PV Entry Level Certificate of Knowledge Exam. Topics include hardware and software tools used for determining percent of shade and orienting solar panels, the effect of PV panel orientation on system power and efficiency, and the load analysis. Additionally, it covers calculating PV panel string sizing when working with grid tie inverters as related to the NABCEP test. National Electrical Code (NEC) and fire code wire sizing, fusing, and other safety instructions and procedures are reviewed. The successful completion of this course and ENERGY 141 qualifies students to take the NABCEP certified solar photovoltaic installers and service technicians entry level certificate of knowledge of PV systems test. Field trips are required. This course may be taken two times for credit using different software.	Energy Program	Renewables; Solar	Leads to a NABCEP Soloar Photovoltaic Installation Certificate		College class; certification	2 Units	American River College	Sacramento	\$20/unit	Yes	<a href="http://web.arc.losrios.edu/catalog0910/Energy.pdf">http://web.arc.losrios.edu/catalog0910/Energy.pdf</a>
DCDT 110 Diesel Engine Repair	This course covers basic engine principles for diesel engine repair. It covers disassembly and reassembly of diesel engine systems, including cleaning and safe removal of engines, fuel injection systems, valve trains, and engine heads. This course may be taken two times for credit using different equipment.	Degree: A.S. - Diesel Technology Certificates: Diesel Technology	Clean Diesel Technology	The diesel technology degree and certificate prepares the students as diesel technicians in the following areas of specialty: brakes, engine repair, hydraulics, and electrical.		College class	4 Units	American River College	Sacramento	\$20/unit	Yes	<a href="http://web.arc.losrios.edu/catalog0910/DieselTech.pdf">http://web.arc.losrios.edu/catalog0910/DieselTech.pdf</a>
DCDT 104 Clean Diesel Rebuild, Retrofit, Repower, Retire	This course covers clean diesel rebuilding, repowering, retrofitting, or retiring of equipment decisions. Topics include rebuilding, replacement, and retirement of diesel systems and components. This course may be taken two times for credit using different equipment.	Degree: A.S. - Diesel Technology Certificates: Diesel Technology	Clean Diesel Technology	The diesel technology degree and certificate prepares the students as diesel technicians in the following areas of specialty: brakes, engine repair, hydraulics, and electrical.		College class	4 Units	American River College	Sacramento	\$20/unit	Yes	<a href="http://web.arc.losrios.edu/catalog0910/DieselTech.pdf">http://web.arc.losrios.edu/catalog0910/DieselTech.pdf</a>
DCDT 112 Clean Diesel Retrofit	This course covers diesel engine retrofit needs for older diesel engines. Topics include troubleshooting, fault codes, and diesel particulate filter systems. This course may be taken two times for credit using different equipment.	Degree: A.S. - Diesel Technology Certificates: Diesel Technology	Clean Diesel Technology	The diesel technology degree and certificate prepares the students as diesel technicians in the following areas of specialty: brakes, engine repair, hydraulics, and electrical.		College class	4 Units	American River College	Sacramento	\$20/unit	Yes	<a href="http://web.arc.losrios.edu/catalog0910/DieselTech.pdf">http://web.arc.losrios.edu/catalog0910/DieselTech.pdf</a>
DCDT 102 Biodiesel Fuel and Fuel Systems	This course covers the chemistry, production, and impact of biodiesel technology. It also covers how to convert vehicle fuel systems to biodiesel and how this process affects warranties.	Degree: A.S. - Diesel Technology Certificates: Diesel Technology	Clean Diesel Technology	The diesel technology degree and certificate prepares the students as diesel technicians in the following areas of specialty: brakes, engine repair, hydraulics, and electrical.		College class	4 Units	American River College	Sacramento	\$20/unit	Yes	<a href="http://web.arc.losrios.edu/catalog0910/DieselTech.pdf">http://web.arc.losrios.edu/catalog0910/DieselTech.pdf</a>
AT 307 Biodiesel Technology	This course covers the chemistry, production, and impact of biodiesel technology. It also covers how to convert vehicle fuel systems to biodiesel and how this process affects warranties.	Automotive Technology program	Biodiesel	The automotive technology program is a combination of classroom and hands-on shop experiences that prepare students for careers in all phases of automotive service and repair on all types of cars.		College class	4 Units	American River College	Sacramento	\$20/unit	Yes	<a href="http://web.arc.losrios.edu/catalog0910/AutoTech.pdf">http://web.arc.losrios.edu/catalog0910/AutoTech.pdf</a>
DCDT 150 Diesel Power Trains	This course covers the diesel power train. Topics include inspection and adjustment of clutch linkage, flywheel, and replacement of clutch brakes. This course can be taken two times for credit using different equipment.	Degree: A.S. - Diesel Technology Certificates: Diesel Technology	Clean Diesel Technology	The diesel technology degree and certificate prepares the students as diesel technicians in the following areas of specialty: brakes, engine repair, hydraulics, and electrical.		College class	4 Units	American River College	Sacramento	\$20/unit	Yes	<a href="http://web.arc.losrios.edu/catalog0910/DieselTech.pdf">http://web.arc.losrios.edu/catalog0910/DieselTech.pdf</a>
DCDT 142 Diesel Emission Control Systems	This course covers the emission control system of the diesel engine. Topics include performance maintenance and emissions control within emission limits. This course may be taken two times for credit using different equipment.	Degree: A.S. - Diesel Technology Certificates: Diesel Technology	Clean Diesel Technology	The diesel technology degree and certificate prepares the students as diesel technicians in the following areas of specialty: brakes, engine repair, hydraulics, and electrical.		College class	4 Units	American River College	Sacramento	\$20/unit	Yes	<a href="http://web.arc.losrios.edu/catalog0910/DieselTech.pdf">http://web.arc.losrios.edu/catalog0910/DieselTech.pdf</a>
DCDT 130 Diesel Brake Systems	This course covers the operation of diesel brake systems and components. Topics include band, shoe, caliper, and full disc brakes. This course may be taken two times for credit using different equipment.	Degree: A.S. - Diesel Technology Certificates: Diesel Technology	Clean Diesel Technology	The diesel technology degree and certificate prepares the students as diesel technicians in the following areas of specialty: brakes, engine repair, hydraulics, and electrical.		College class	4 Units	American River College	Sacramento	\$20/unit	Yes	<a href="http://web.arc.losrios.edu/catalog0910/DieselTech.pdf">http://web.arc.losrios.edu/catalog0910/DieselTech.pdf</a>
DCDT 140 Diesel Electrical Systems	This course covers the operation of diesel electrical systems. Topics include sensors used in emission control, electrical circuits, test instruments, charging systems, and electrical starting systems. This course may be taken two times for credit using different equipment.	Degree: A.S. - Diesel Technology Certificates: Diesel Technology	Clean Diesel Technology	The diesel technology degree and certificate prepares the students as diesel technicians in the following areas of specialty: brakes, engine repair, hydraulics, and electrical.		College class	4 Units	American River College	Sacramento	\$20/unit	Yes	<a href="http://web.arc.losrios.edu/catalog0910/DieselTech.pdf">http://web.arc.losrios.edu/catalog0910/DieselTech.pdf</a>
DCDT 162 Clean Diesel Software Support	This course covers the skills needed to adequately retrieve and apply system information using internet based technical manuals specifically geared toward diesel tractor emission control systems. This course may be taken two times for credit using different software.	Degree: A.S. - Diesel Technology Certificates: Diesel Technology	Clean Diesel Technology	The diesel technology degree and certificate prepares the students as diesel technicians in the following areas of specialty: brakes, engine repair, hydraulics, and electrical.		College class	4 Units	American River College	Sacramento	\$20/unit	Yes	<a href="http://web.arc.losrios.edu/catalog0910/DieselTech.pdf">http://web.arc.losrios.edu/catalog0910/DieselTech.pdf</a>

DCDT 101 Diesel Preventive Maintenance	This course introduces the field of clean diesel technology and preventative maintenance. It covers proper safety and hazardous waste training, use of basic hand and power tools, and the basic workings of the diesel engine. This course may be taken two times for credit using different equipment.	Degree: A.S. - Diesel Technology Certificates: Diesel Technology	Clean Diesel Technology	The diesel technology degree and certificate prepares the students as diesel technicians in the following areas of specialty: brakes, engine repair, hydraulics, and electrical. This degree or certificate provides students with the knowledge to successfully enter a variety of electronics and telecommunication careers.	College class	4 Units	American River College	Sacramento	\$20/unit	Yes	<a href="http://web.arc.losrios.edu/catalog0910/DieselTech.pdf">http://web.arc.losrios.edu/catalog0910/DieselTech.pdf</a>
ET 162 Home Electronics and Power	This course is an overview of the power and electronics used in the modern home. It covers the power distributed through the home as well as the appliances and communication systems used. The topics of home security, power conservation, alternate energy sources, and home automation are also covered.	Electronics Technology program	Building performance		College class	1 Unit	American River College	Sacramento	\$20/unit	Yes	<a href="http://web.arc.losrios.edu/catalog0910/ElecTech.pdf">http://web.arc.losrios.edu/catalog0910/ElecTech.pdf</a>
DCDT 103 Clean Diesel Systems	This course provides a complete overview of the clean diesel engine system. Topics include fuel injection systems, emission regulations, and diesel emission control systems. This course can be taken two times for credit using different equipment.	Degree: A.S. - Diesel Technology Certificates: Diesel Technology	Clean Diesel Technology	The diesel technology degree and certificate prepares the students as diesel technicians in the following areas of specialty: brakes, engine repair, hydraulics, and electrical.	College class	4 Units	American River College	Sacramento	\$20/unit	Yes	<a href="http://web.arc.losrios.edu/catalog0910/DieselTech.pdf">http://web.arc.losrios.edu/catalog0910/DieselTech.pdf</a>
DCDT 120 Basic Hydraulic Principles of Diesel Technology	This course provides an introduction to the basic hydraulic principles and functions of the diesel engine. Topics include hydraulic fundamentals and principles, functions of hydraulic fluids, directional and flow control valves, and machine hydraulic overview. This course may be taken two times for credit using different equipment.	Degree: A.S. - Diesel Technology Certificates: Diesel Technology	Clean Diesel Technology	The diesel technology degree and certificate prepares the students as diesel technicians in the following areas of specialty: brakes, engine repair, hydraulics, and electrical.	College class	4 Units	American River College	Sacramento	\$20/unit	Yes	<a href="http://web.arc.losrios.edu/catalog0910/DieselTech.pdf">http://web.arc.losrios.edu/catalog0910/DieselTech.pdf</a>
AT 316 Alternative Fuels and Advanced Technology Vehicles	This course provides an overview of existing fuels (hydrocarbon), renewable/sustainable alternative fuels, gaseous, and future fuels. It covers how they function in various fuel delivery systems, including hybrid, by examining the history, chemistry, production, and practicality of each. Field trips may be required.	Automotive Technology program	Alternative Vehicles	The automotive technology program is a combination of classroom and hands-on shop experiences that prepare students for careers in all phases of automotive service and repair on all types of cars.	College class	4 Units	American River College	Sacramento	\$20/unit	Yes	<a href="http://web.arc.losrios.edu/catalog0910/AutoTech.pdf">http://web.arc.losrios.edu/catalog0910/AutoTech.pdf</a>
ENERGY 141 Electrical & Mechanical Applications for Solar Installers	This is an advanced course in Solar Photovoltaic (PV) energy. Topics include using hardware and software tools for shading and correctly orientating solar panels, the effect PV panel orientation has on system power output and efficiency, what effect optimum PV panel loading has on power produced, and how to perform load analysis on a specific residence. Additionally, it covers various manufacturers' software to calculate PV panel string sizing for optimum efficiency when working with grid tie inverters. National Electrical Code (NEC) and fire code wire sizing, fusing, and other safety instructions and procedures are stressed. The successful completion of this course and ENERGY 142 qualify students to take the NABCEP (North American Certified Energy Practitioner) certified solar photovoltaic installers and service technicians entry level certificate of knowledge of PV systems test. Field trips are required. This course may be taken two times for credit using different test equipment.	Energy Program	Renewables; Solar	Leads to a NABCEP Soloar Photovoltaic Installation Certificate	College class; certification	4 Units	American River College	Sacramento	\$20/unit	Yes	<a href="http://web.arc.losrios.edu/catalog0910/Energy.pdf">http://web.arc.losrios.edu/catalog0910/Energy.pdf</a>
ENERGY 140 Electrical Applications for Solar Installers	This is an introductory course in Solar Photovoltaic (PV) energy. It covers how solar photovoltaic energy works and how to assess if PV is feasible in a variety of situations. Topics include calculating and measuring PV power outputs for different conditions, using software tools and hardware for calculating and sizing PV systems, and measuring and analyzing shading conditions. Additionally, it addresses how to install and connect necessary components. This is the first course in a series leading to the solar photovoltaic energy installers certification. Field trips are required.	Energy Program	Renewables; Solar	Leads to a NABCEP Soloar Photovoltaic Installation Certificate	College class; certification	4 Units	American River College	Sacramento	\$20/unit	Yes	<a href="http://web.arc.losrios.edu/catalog0910/Energy.pdf">http://web.arc.losrios.edu/catalog0910/Energy.pdf</a>
ENERGY 143 Design, Installaion and Troubleshooting of Solar Systems		Energy Program	Renewables; Solar	Leads to a NABCEP Soloar Photovoltaic Installation Certificate	College class; certification	4 Units	American River College	Sacramento	\$20/unit	Yes	
ELECTRONICS 302 Principles of Energy and Elecronics		Energy Program	Renewables; Solar	Leads to a NABCEP Soloar Photovoltaic Installation Certificate	College class; certification	4 Units	American River College	Sacramento	\$20/unit	Yes	
Interior Design-Green Building and Sustainable Design (LEED)			LEED		College Program		American River College	Sacramento	\$20/unit	Spring/Fall 2010	<a href="http://www.losrios.edu/downloads/GreenForce3-31-09.pdf">http://www.losrios.edu/downloads/GreenForce3-31-09.pdf</a>
Lighting Efficiency			Lighting		College Program		American River College	Sacramento	\$20/unit	Spring/Fall 2010	<a href="http://www.losrios.edu/downloads/GreenForce3-31-09.pdf">http://www.losrios.edu/downloads/GreenForce3-31-09.pdf</a>
Energy Management Technician			Energy Basics		College Program		American River College	Sacramento	\$20/unit	Spring/Fall 2010	<a href="http://www.losrios.edu/downloads/GreenForce3-31-09.pdf">http://www.losrios.edu/downloads/GreenForce3-31-09.pdf</a>
CONST 294 Topics in Green Building Technology	This course covers special topics not included in current green building classes. Topics may be offered in workshops or seminar presentations on timely subjects or targeted for specific audiences. This course may be taken four times for credit on different topics in order meet current industry training requirements.	Construction Program	Green Building	Students in the construction program interested in green building	College class	.5-4 units	Consumnes River College	Sacramento	\$20/unit	Yes	<a href="http://www.crc.losrios.edu/College_Catalog/Areas_of_Study/Construction/Course_Descriptions.htm">http://www.crc.losrios.edu/College_Catalog/Areas_of_Study/Construction/Course_Descriptions.htm</a>
BIT 150 California Energy Code - Building Energy Efficiency Standards	This course introduces the interpretation and use of the California Energy Code, and legal and administrative enforcement procedures with emphasis on heating, ventilating, air conditioning and related installations.	Building Inspection Technology	Building Performance	Students in the Building Inspection Technology program	college class	3 Units	Consumnes River College	Sacramento	\$20/unit	Yes	<a href="http://www.crc.losrios.edu/College_Catalog/Areas_of_Study/Building_Inspection_Technology/Course_Descriptions.htm">http://www.crc.losrios.edu/College_Catalog/Areas_of_Study/Building_Inspection_Technology/Course_Descriptions.htm</a>

HORT 323 Sustainable Landscape Design	This course is designed to provide the student with increased knowledge and understanding in the area of Sustainable Landscape Design. This course will examine the fundamental principles of sustainability, and how the principles can be utilized to guide the designer in the development of ornamental landscapes. An emphasis will be placed on the relationships between environmental conditions, soils, water, plant materials, and construction materials and how these relationships guide the landscape development process. Additional topics will include construction material selection, plant material selection, soil preparation, sustainable landscape maintenance, and pest management for sustainable landscapes.	Horticulture	Climate and Environment; Water and Energy	Students in the Horticulture program	College class	1 Unit	Consumnes River College	Sacramento	\$20/unit	Yes	<a href="http://www.crc.losrios.edu/College_Catalog/Areas_of_Study/Horticulture/Course_Descriptions.htm">http://www.crc.losrios.edu/College_Catalog/Areas_of_Study/Horticulture/Course_Descriptions.htm</a>
ARCH 341 Introduction to Green Buildings II	This course is the study of theory and application of climate, energy use and comfort as determinants of architectural form in small scale buildings. Emphasis is placed on architectural methods and topics related to indoor and outdoor air quality; history of energy and vernacular architecture; energy sources for buildings; heat transfer and flow for envelope-load dominated buildings; human comfort and performance; site and climate analysis; climate and strategies for buildings; psychrometry; designing for heating and cooling; and heating and cooling systems. The course enhances students knowledge base and preparation for design classes, ARCH 332, ARCH 334 and ARCH 340.	Architectural Technology Certificate--Green Buildings: Environmental Design, Energy Management and Performance Based Construction	Building Performance; Building Envelope	The purpose of this certificate is to develop job skills and an understanding of green strategies for high performance buildings and livable communities. It is focused at students and professionals in the fields of architecture; construction; building management; construction management; building inspection; design technology; landscape; and planning, who want to acquire a comprehensive knowledge of an integrated, economic life-cycle approach to the design of the built environment.	College class	1.5 Units	Consumnes River College	Sacramento	\$20/unit	Yes	<a href="http://www.crc.losrios.edu/x646.xml#1639">http://www.crc.losrios.edu/x646.xml#1639</a>
ARCH 340 Introduction to Green Buildings I	This course is the study of theory and application of climate, energy use and comfort as determinants of architectural form in small scale buildings. Emphasis is placed on architectural methods and topics related to resource and waste reduction; site analysis; sun access; sun shading; daylighting; lighting for envelope-load dominated buildings; and sound in buildings. The course enhances students' knowledge base and preparation for design classes, ARCH 332, ARCH 334 and ARCH 341.	Architectural Technology Certificate--Green Buildings: Environmental Design, Energy Management and Performance Based Construction	Building Performance; Building Envelope	The purpose of this certificate is to develop job skills and an understanding of green strategies for high performance buildings and livable communities. It is focused at students and professionals in the fields of architecture; construction; building management; construction management; building inspection; design technology; landscape; and planning, who want to acquire a comprehensive knowledge of an integrated, economic life-cycle approach to the design of the built environment.	College class	1.5 Units	Consumnes River College	Sacramento	\$20/unit	Yes	<a href="http://www.crc.losrios.edu/x646.xml#1638">http://www.crc.losrios.edu/x646.xml#1638</a>
AMT 305 Survey of Alternative Fueled & Hybrid Vehicles	This course will provide the students with resources and relevant information about the technologies of alternative fueled, electric and hybrid vehicle powertrains, as well as the impacts of their wider application in society. While the course will have a technical component, the larger focus of the course is targeted at both the automotive and non-automotive student. Access to a computer with Internet capabilities will be necessary for this course.	Automotive Mechanics Technology program	Alternative Vehicles	The Automotive Mechanics Technology program emphasizes developing skills required for efficient diagnosis, maintenance, and repair of the automobile and its components.	College class	3 Units	Consumnes River College	Sacramento	\$20/unit	Yes	<a href="http://www.crc.losrios.edu/College_Catalog/Areas_of_Study/Automotive_Mechanics_Technology/Course_Descriptions.htm">http://www.crc.losrios.edu/College_Catalog/Areas_of_Study/Automotive_Mechanics_Technology/Course_Descriptions.htm</a>
ARCH 303 Introduction to Sustainability in the Built Environment II	This course, along with ARCH 302 is an overview of the process of green building, covering theory, history, state of the industry, and best practices. This course can be taken independently or consecutively with ARCH 302. The course covers various building assessment systems including LEED, Green Globes, GreenPoint Rated, etc. Topics include: the background of the green movement; high performance green and natural building design; green building assessment; the green building process and ecological design; building water conservation systems; recycling, re-use, waste management and green material selection; indoor environmental quality including air quality, daylighting, views and thermal comfort; green construction operations; building commissioning; and economic analysis of green buildings. It is a comprehensive look at an emerging process for economic and resource sustainability.	Architectural Technology Certificate--Green Buildings: Environmental Design, Energy Management and Performance Based Construction	Building Performance; Building Envelope	The purpose of this certificate is to develop job skills and an understanding of green strategies for high performance buildings and livable communities. It is focused at students and professionals in the fields of architecture; construction; building management; construction management; building inspection; design technology; landscape; and planning, who want to acquire a comprehensive knowledge of an integrated, economic life-cycle approach to the design of the built environment.	College class	1.5 units	Consumnes River College	Sacramento	\$20/unit	Yes	<a href="http://www.crc.losrios.edu/x646.xml#1637">http://www.crc.losrios.edu/x646.xml#1637</a>
ARCH 302 Introduction to Sustainability in the Built Environment I	This course, along with ARCH 303, is an overview of the process of green building, covering theory, history, state of the industry, and best practices. This course can be taken independently or consecutively with ARCH 303. The course covers various building assessment systems including LEED, Green Globes, GreenPoint Rated, etc. Topics include: the background of the green movement; high performance green and natural building design; green building assessment; the green building process and ecological design; sustainable sites including transportation, habitat, landscaping and encouraging pedestrian environments; building thermal performance and envelope; mechanical and electrical systems. It is a comprehensive look at an emerging process for economic and resource sustainability.	Architectural Technology Certificate--Green Buildings: Environmental Design, Energy Management and Performance Based Construction		The purpose of this certificate is to develop job skills and an understanding of green strategies for high performance buildings and livable communities. It is focused at students and professionals in the fields of architecture; construction; building management; construction management; building inspection; design technology; landscape; and planning, who want to acquire a comprehensive knowledge of an integrated, economic life-cycle approach to the design of the built environment.	College class	1.5 Units	Consumnes River College	Sacramento	\$20/unit	Yes	<a href="http://www.crc.losrios.edu/x646.xml#1636">http://www.crc.losrios.edu/x646.xml#1636</a>

GEOG 305	This interdisciplinary course explores the natural and human factors causing the Earth's climate to change. Whether alarmed, skeptical, or just curious about climate change, this course will provide the scientific tools to analyze the evidence that climate change is a looming threat. Through lectures, readings, discussions and projects, students will examine the Earth's present and past climates as well as the influence of climate on the geographical distribution of plants, animals and human societies. This course is the same as BIOL 351, and only one may be taken for credit. See "Cross-Listed Courses" in the catalog.	Degree: A.S. Geography	Climate and Environment	Students in the Geography program	College class	3 Units	Consumnes River College	Sacramento	\$20/unit	Yes	<a href="http://www.crc.losrios.edu/College_Catalog/Areas_of_Study/Geography/Course_Descriptions.htm">http://www.crc.losrios.edu/College_Catalog/Areas_of_Study/Geography/Course_Descriptions.htm</a>
GEOG 302	This introductory course offers an interdisciplinary perspective on the major environmental problems confronting society and explores solutions directed toward producing a more sustainable future. Course topics include an introduction to environmental issues, and related values, ethics and politics; a primer on Earth system sciences, the interconnected nature of the atmosphere, hydrosphere, lithosphere, and biosphere; a global survey of natural resources and exploitation; changing global climates; the world water crisis; the demography of human population, and contrasts between less- and more-developed countries; agricultural and food supply challenges; renewable and nonrenewable energy resources; and land use patterns and related issues. Throughout the course, human impacts on the environment, environmental impacts on human societies, and the sustainability of economies and practices at local, regional, and global scales are investigated. A field trip may be required to relate class discussions to the real world.	DEGREE: A.S.—Environmental Studies and Sustainability	Climate and Environment	Students interested in the following career options: Natural Resource Management; Forestry; Range Management; Wildlife Biology; Agriculture; Soil and Water Conservation; Land Use Planning; Waste Management; Environmental Education; Environmental Policy And Planning; Environmental Law; Environmental Consulting; Environmental Lobbying; Environmental Planning; Environmental Protection; Environmental Compliance; Environmental Engineering; Air Quality Control; Landscape Architecture; Urban and Regional Planning; Alternative Energy Development; Risk Analysis; Contaminated Lands Reclamation; Research; Consulting	College class	3 Units	Consumnes River College	Sacramento	\$20/unit	Yes	<a href="http://www.crc.losrios.edu/College_Catalog/Areas_of_Study/Geography/Course_Descriptions.htm">http://www.crc.losrios.edu/College_Catalog/Areas_of_Study/Geography/Course_Descriptions.htm</a>
Green Building Draftsperson, Building Information Management (BIM)			Building Performance; Energy Basics		College Program		Consumnes River College	Sacramento	\$20/unit	Fall 2010	<a href="http://www.losrios.edu/downloads/GreenForce-3-31-09.pdf">http://www.losrios.edu/downloads/GreenForce-3-31-09.pdf</a>
Home Energy Auditing			Building Performance; Audits	Residential	College Program		Consumnes River College	Sacramento	\$20/unit	Fall 2010	<a href="http://www.losrios.edu/downloads/GreenForce-3-31-09.pdf">http://www.losrios.edu/downloads/GreenForce-3-31-09.pdf</a>
Sustainable Landscape and Water Systems Design			Water and Energy		College Program		Consumnes River College	Sacramento	\$20/unit	Fall 2010	<a href="http://www.losrios.edu/downloads/GreenForce-3-31-09.pdf">http://www.losrios.edu/downloads/GreenForce-3-31-09.pdf</a>
ENVT 354 WASTE WATER MANAGEMENT: BASIC INSTRUMENTATION AND ELECTRICAL CONTROLS	This course is an introduction to power and control circuits and devices used with water and wastewater distribution and treatment systems. Units of instruction include a study of electron theory, magnetism, induction, alternating current, direct current, resistance and capacitance. Practice using electrical meters and test instruments in laboratory classes along with related safety practices will also be covered. Field trips may be required.	Environmental Technology Program	Water and Energy	Students interested in the following career options: Engineering/Consulting Firms; Governmental Compliance Agencies; Solid Waste Disposal Landfills; Agricultural Chemical Manufacture & Application Firms; Analytical Laboratories; Treatment, Storage, Disposal Facilities; Warehouse-Transportation Systems; Electronics Semiconductor Industry; Workplace Health and Safety Support; Energy & Environmental Audit/Inventories	College class	4 units	Folsom Lake College	Sacramento	\$20/unit	Yes	<a href="http://www.flc.losrios.edu/Academics/Environmental_Technology.htm">http://www.flc.losrios.edu/Academics/Environmental_Technology.htm</a>
ENVT 304 ENVIRONMENTAL BIOLOGY	This course presents an overview of ecosystems and natural resources. Major topics covered include ecological principles, ecosystem functioning, conservation biology, resource use and management, pollution and other human-caused environmental impacts. This course provides the background needed to understand major global and regional issues such as acid rain, global warming, hazardous waste disposal, deforestation and endangered species recovery. ENVT 304 is especially useful for Environmental Technology, Environmental Sciences, Ecology, Recreation, Education and Political Science majors. Field trips, attendance at public meetings and/or a semester project may be required. This course is the same as BIOL 350, and only one may be taken for credit.	Environmental Technology Program	Climate and Environment; Water and Energy	Students interested in the following career options: Engineering/Consulting Firms; Governmental Compliance Agencies; Solid Waste Disposal Landfills; Agricultural Chemical Manufacture & Application Firms; Analytical Laboratories; Treatment, Storage, Disposal Facilities; Warehouse-Transportation Systems; Electronics Semiconductor Industry; Workplace Health and Safety Support; Energy & Environmental Audit/Inventories	College class	3 Units	Folsom Lake College	Sacramento	\$20/unit	Yes	<a href="http://www.flc.losrios.edu/Academics/Environmental_Technology.htm">http://www.flc.losrios.edu/Academics/Environmental_Technology.htm</a>
ENVT 361 WASTEWATER COLLECTION SYSTEMS OPERATION AND MAINTENANCE	This course provides a basic level of understanding of proper installation, inspections, operations, maintenance and repair of wastewater collection systems. Topics covered include the wastewater collection operator, wastewater collection systems, safe procedures, inspecting and testing collections systems, pipeline cleaning and maintenance methods, and underground repairs. Field trips and/or a semester project may be required.	Environmental Technology Program	Water and Energy	Students interested in the following career options: Engineering/Consulting Firms; Governmental Compliance Agencies; Solid Waste Disposal Landfills; Agricultural Chemical Manufacture & Application Firms; Analytical Laboratories; Treatment, Storage, Disposal Facilities; Warehouse-Transportation Systems; Electronics Semiconductor Industry; Workplace Health and Safety Support; Energy & Environmental Audit/Inventories	College class	3 Units	Folsom Lake College	Sacramento	\$20/unit		<a href="http://www.flc.losrios.edu/Academics/Environmental_Technology.htm">http://www.flc.losrios.edu/Academics/Environmental_Technology.htm</a>



ENVT 357 WASTEWATER OPERATIONS AND MAINTENANCE II	<p>This course provides an advanced level of understanding of wastewater operations and maintenance. Topics covered include activated sludge, sludge digestion and solids handling, effluent disposal, plant safety and good housekeeping, maintenance, basic laboratory procedures, application of computers for plant operations and maintenance, analysis and presentation of data, records and report writing. Field trips may be required.</p>	Environmental Technology Program	Water and Energy	Students interested in the following career options: Engineering/Consulting Firms; Governmental Compliance Agencies; Solid Waste Disposal Landfills; Agricultural Chemical Manufacture & Application Firms; Analytical Laboratories; Treatment, Storage, Disposal Facilities; Warehouse-Transportation Systems; Electronics Semiconductor Industry; Workplace Health and Safety Support; Energy & Environmental Audit/Inventories	College class	3 Units	Folsom Lake College	Sacramento	\$20/unit	<a href="http://www.flc.losrios.edu/Academics/Environmental_Technology.htm">http://www.flc.losrios.edu/Academics/Environmental_Technology.htm</a>
ENVT 359 WATER TREATMENT OPERATION AND MAINTENANCE II	<p>This course provides an advanced level understanding of drinking water treatment. Topics covered include drinking water regulations, laboratory procedures, iron and manganese control, fluoridation, water treatment plant design, advanced treatment process and technologies such as softening, membrane filtration and demineralization, instrumentation and control, advance plant maintenance and plant administration. This course provides the background into the importance of advanced water treatment, its functionality, past and present technology and the future of drinking water. Field trips and/or a semester project may be required.</p> <p>This course meets the initial education requirements for treatment operator certification exam. Field trips may be required.</p>	Environmental Technology Program	Water and Energy	Students interested in the following career options: Engineering/Consulting Firms; Governmental Compliance Agencies; Solid Waste Disposal Landfills; Agricultural Chemical Manufacture & Application Firms; Analytical Laboratories; Treatment, Storage, Disposal Facilities; Warehouse-Transportation Systems; Electronics Semiconductor Industry; Workplace Health and Safety Support; Energy & Environmental Audit/Inventories	College class	3 Units	Folsom Lake College	Sacramento	\$20/unit	<a href="http://www.flc.losrios.edu/Academics/Environmental_Technology.htm">http://www.flc.losrios.edu/Academics/Environmental_Technology.htm</a>
ENVT 358 WATER TREATMENT OPERATION AND MAINTENANCE I	<p>This course provides an entry level understanding of drinking water treatment. Topics covered include history of water treatment, responsibilities of the plant operator, reasons for treating water, source water management, water treatment facilities, treatment process and technologies, disinfection and plant maintenance. This course provides the background into the importance of treating water, its functionality, past and present technology and the future of drinking water. Field trips may be required.</p>	Environmental Technology Program	Water and Energy	Students interested in the following career options: Engineering/Consulting Firms; Governmental Compliance Agencies; Solid Waste Disposal Landfills; Agricultural Chemical Manufacture & Application Firms; Analytical Laboratories; Treatment, Storage, Disposal Facilities; Warehouse-Transportation Systems; Electronics Semiconductor Industry; Workplace Health and Safety Support; Energy & Environmental Audit/Inventories	College class	3 Units	Folsom Lake College	Sacramento	\$20/unit	<a href="http://www.flc.losrios.edu/Academics/Environmental_Technology.htm">http://www.flc.losrios.edu/Academics/Environmental_Technology.htm</a>
ENVT 356 WASTEWATER OPERATIONS AND MAINTENANCE I	<p>This course provides an introduction of wastewater operations and maintenance. Topics covered include responsibilities of the plant operator, water treatment and wastes, wastewater treatment facilities, preliminary treatment operations and maintenance including racks, screen, grit removal, sedimentation and flotation, trickling filters, rotating biological contractors, activated sludge, waste treatment ponds, disinfection and chlorination. This course provides the student with an entry level background into the field of operations and maintenance of wastewater. Field trips and/or a semester project may be required.</p>	Environmental Technology Program	Water and Energy	Students interested in the following career options: Engineering/Consulting Firms; Governmental Compliance Agencies; Solid Waste Disposal Landfills; Agricultural Chemical Manufacture & Application Firms; Analytical Laboratories; Treatment, Storage, Disposal Facilities; Warehouse-Transportation Systems; Electronics Semiconductor Industry; Workplace Health and Safety Support; Energy & Environmental Audit/Inventories	College class	3 units	Folsom Lake College	Sacramento	\$20/unit	<a href="http://www.flc.losrios.edu/Academics/Environmental_Technology.htm">http://www.flc.losrios.edu/Academics/Environmental_Technology.htm</a>
ENVT 351 MATH FOR WATER AND WASTEWATER OPERATORS	<p>This course provides an introduction to wastewater and water mathematic functions. Topics covered include general math, including significant figures and proper rounding, applicable algebraic and geometry equations, unit analysis, volumes, flows, pressures, conversions, solution strengths, and applicable laboratory and chemistry equations used in water and wastewater treatment operations. Field trips may be required.</p>	Environmental Technology Program	Water and Energy	Students interested in the following career options: Engineering/Consulting Firms; Governmental Compliance Agencies; Solid Waste Disposal Landfills; Agricultural Chemical Manufacture & Application Firms; Analytical Laboratories; Treatment, Storage, Disposal Facilities; Warehouse-Transportation Systems; Electronics Semiconductor Industry; Workplace Health and Safety Support; Energy & Environmental Audit/Inventories	College class	3 units	Folsom Lake College	Sacramento	\$20/unit	Yes <a href="http://www.flc.losrios.edu/Academics/Environmental_Technology.htm">http://www.flc.losrios.edu/Academics/Environmental_Technology.htm</a>

ENVT 355 INTRODUCTION TO WATER, WASTEWATER AND RECYCLED WATER MANAGEMENT	<p>This course provides an introduction to water, wastewater and recycled water management. Topics covered include history of water supply and treatment, wastewater collection and treatment, and recycling water in the world and in the United States; and an overview of the State and federal regulations governing water supply, wastewater treatment and recycled water use, including permitting requirements and operator certification program. This course provides an introduction to managing water and wastewater systems. Field trips may be required.</p>	Environmental Technology Program	Water and Energy	<p>Students interested in the following career options: Engineering/Consulting Firms; Governmental Compliance Agencies; Solid Waste Disposal Landfills; Agricultural Chemical Manufacture &amp; Application Firms; Analytical Laboratories; Treatment, Storage, Disposal Facilities; Warehouse-Transportation Systems; Electronics Semiconductor Industry; Workplace Health and Safety Support; Energy &amp; Environmental Audit/Inventories</p>	College class	3 Units	Folsom Lake College	Sacramento	\$20/unit	Yes	<a href="http://www.flc.losrios.edu/Academics/Environmental_Technology.htm">http://www.flc.losrios.edu/Academics/Environmental_Technology.htm</a>
ENVT 350.2 GROUNDWATER RESOURCES	<p>This course provides an overview of groundwater resources. The structure of aquifers including groundwater recharge, storage, and flow is discussed. Students will analyze the impacts of groundwater withdrawal and contamination. Students will learn to use basic sampling and analysis methods used to assess groundwater systems. The remediation of contaminated groundwater will be discussed. Students will be expected to conduct lab work; some of this may be outdoors. The class is useful for students interested in Environmental Science, Environmental Technology, Geography, Natural Resource Management, and Biology. A basic knowledge of water resources is assumed before beginning the course. The class is not intended for students training as water treatment plant operators.</p>	Environmental Technology Program	Water and Energy	<p>Students interested in the following career options: Engineering/Consulting Firms; Governmental Compliance Agencies; Solid Waste Disposal Landfills; Agricultural Chemical Manufacture &amp; Application Firms; Analytical Laboratories; Treatment, Storage, Disposal Facilities; Warehouse-Transportation Systems; Electronics Semiconductor Industry; Workplace Health and Safety Support; Energy &amp; Environmental Audit/Inventories</p>	College class	1.5 units	Folsom Lake College	Sacramento	\$20/unit	Yes	<a href="http://www.flc.losrios.edu/Academics/Environmental_Technology.htm">http://www.flc.losrios.edu/Academics/Environmental_Technology.htm</a>
ENVT 352 WATER RESOURCE MANAGEMENT	<p>This course provides an overview of managing potable and waste water supply with respect to use. Topics include water resource demand, the soil/water relationship and water quality. Water treatment laws and regulation will also be discussed. Students learn the basic sampling and analysis methods to assess quality and application issues. Students are expected to conduct lab work, some of which will be outdoors. This class is useful for students interested in Environmental Science or Technology, Natural Resource Management and Biology. This class is not intended for students training as water treatment plant operators.</p>	Environmental Technology Program	Water and Energy	<p>Students interested in the following career options: Engineering/Consulting Firms; Governmental Compliance Agencies; Solid Waste Disposal Landfills; Agricultural Chemical Manufacture &amp; Application Firms; Analytical Laboratories; Treatment, Storage, Disposal Facilities; Warehouse-Transportation Systems; Electronics Semiconductor Industry; Workplace Health and Safety Support; Energy &amp; Environmental Audit/Inventories</p>	College class	1.5 Units	Folsom Lake College	Sacramento	\$20/unit	Yes	<a href="http://www.flc.losrios.edu/Academics/Environmental_Technology.htm">http://www.flc.losrios.edu/Academics/Environmental_Technology.htm</a>
ENVT 350.3 SURFACE FRESHWATER RESOURCES	<p>This course provides an overview of surface water resources including lakes, streams, and wetlands. The general characteristics of these ecosystems will be discussed with an emphasis on the biology of these systems. Students will learn to use basic sampling and analysis methods used to assess freshwater systems. The ecotoxicology and clean up of contaminated surface water will be discussed. Students will be expected to conduct lab work, some of which may be outdoors. The class is useful for students interested in Environmental Science, Environmental Technology, Geography, Natural Resource Management, and Biology. A basic knowledge of water resources is assumed before beginning the course. The class is not intended for students training as water treatment plant operators.</p>	Environmental Technology Program	Water and Energy	<p>Students interested in the following career options: Engineering/Consulting Firms; Governmental Compliance Agencies; Solid Waste Disposal Landfills; Agricultural Chemical Manufacture &amp; Application Firms; Analytical Laboratories; Treatment, Storage, Disposal Facilities; Warehouse-Transportation Systems; Electronics Semiconductor Industry; Workplace Health and Safety Support; Energy &amp; Environmental Audit/Inventories</p>	College class	1.5 units	Folsom Lake College	Sacramento	\$20/unit	Yes	<a href="http://www.flc.losrios.edu/Academics/Environmental_Technology.htm">http://www.flc.losrios.edu/Academics/Environmental_Technology.htm</a>
ENVT 350.1 FUNDAMENTALS OF WATER RESOURCES	<p>This course provides an overview of water resources including aspects of the chemistry, geography, and biology of aquatic systems. Topics include hydrologic cycle, ocean resources, freshwater systems, and groundwater. Water laws and regulations are also discussed. The class is useful for students interested in Environmental Science, Environmental Technology, Geography, Natural Resource Management, and Biology. (The class is not intended for students training as water treatment plant operators.)</p>	Environmental Technology Program	Water and Energy	<p>Students interested in the following career options: Engineering/Consulting Firms; Governmental Compliance Agencies; Solid Waste Disposal Landfills; Agricultural Chemical Manufacture &amp; Application Firms; Analytical Laboratories; Treatment, Storage, Disposal Facilities; Warehouse-Transportation Systems; Electronics Semiconductor Industry; Workplace Health and Safety Support; Energy &amp; Environmental Audit/Inventories</p>	College class	1 Unit	Folsom Lake College	Sacramento	\$20/unit	Yes	<a href="http://www.flc.losrios.edu/Academics/Environmental_Technology.htm">http://www.flc.losrios.edu/Academics/Environmental_Technology.htm</a>

ENVT 350 WATER RESOURCES	<p>This course provides an overview of water resources including aspects of the chemistry, geography, and biology of aquatic systems. Water laws and the ecotoxicology of water resources will also be discussed. Students will learn to use basic sampling and analysis methods to assess water resources. Students will be expected to conduct lab work, some of which may be outdoors. The class is useful for students interested in Environment Science, Environmental Technology, Geography, Natural Resource Management, and Biology. This class is not intended for students training as water treatment plant operators.</p>	Environmental Technology Program	Water and Energy	<p>Students interested in the following career options: Engineering/Consulting Firms; Governmental Compliance Agencies; Solid Waste Disposal Landfills; Agricultural Chemical Manufacture &amp; Application Firms; Analytical Laboratories; Treatment, Storage, Disposal Facilities; Warehouse-Transportation Systems; Electronics Semiconductor Industry; Workplace Health and Safety Support; Energy &amp; Environmental Audit/Inventories</p>	College class	4 units	Folsom Lake College	Sacramento	\$20/unit	Yes	<a href="http://www.flc.losrios.edu/Academics/Environmental_Technology.htm">http://www.flc.losrios.edu/Academics/Environmental_Technology.htm</a>
ENVT 360 WATER DISTRIBUTION OPERATION AND MAINTENANCE	<p>This course provides an understanding of drinking water distribution systems operation and maintenance. Topics covered include: design criteria, storage, pumping, flow control, construction methods, disinfection, control of water quality in a water distribution system, federal and state drinking water regulations, maintenance and administration of a water distribution system. Field trips and/or a semester project may be required. This course meets the initial educational requirements for a distribution operator certification exam.</p>	Environmental Technology Program	Water and Energy	<p>Students interested in the following career options: Engineering/Consulting Firms; Governmental Compliance Agencies; Solid Waste Disposal Landfills; Agricultural Chemical Manufacture &amp; Application Firms; Analytical Laboratories; Treatment, Storage, Disposal Facilities; Warehouse-Transportation Systems; Electronics Semiconductor Industry; Workplace Health and Safety Support; Energy &amp; Environmental Audit/Inventories</p>	College class	3 Units	Folsom Lake College	Sacramento	\$20/unit		<a href="http://www.flc.losrios.edu/Academics/Environmental_Technology.htm">http://www.flc.losrios.edu/Academics/Environmental_Technology.htm</a>
ENVT 353 SCIENCE FOR WATER AND WASTEWATER OPERATORS	<p>This course will cover three topic areas, Biology, Chemistry, and Physics as they apply to operation, maintenance, and management of water and wastewater facilities. The course is intended to provide the student with a fundamental understanding of the sciences underlying studies of water and wastewater conveyance and treatment. Field trips may be required.</p>	Environmental Technology Program	Water and Energy	<p>Students interested in the following career options: Engineering/Consulting Firms; Governmental Compliance Agencies; Solid Waste Disposal Landfills; Agricultural Chemical Manufacture &amp; Application Firms; Analytical Laboratories; Treatment, Storage, Disposal Facilities; Warehouse-Transportation Systems; Electronics Semiconductor Industry; Workplace Health and Safety Support; Energy &amp; Environmental Audit/Inventories</p>	College class	4 units	Folsom Lake College	Sacramento	\$20/unit	Yes	<a href="http://www.flc.losrios.edu/Academics/Environmental_Technology.htm">http://www.flc.losrios.edu/Academics/Environmental_Technology.htm</a>
MET 255 Mechanical Systems Maintenance	<p>This course introduces the student to basic maintenance concepts for basic mechanical systems. Units of instruction include coil maintenance, filters management, indoor air quality, lubrication, belts and drives, verifying operation, monitoring equipment, and maintenance contracts. Components of this course may be offered online. Students may be required to have access to a computer and the Internet and have some familiarity with a computer.</p>	Mechanical-Electrical Technology A.S.; Certification of Achievement		<p>Students interested in the following career options: Engineering/Consulting Firms; Governmental Compliance Agencies; Solid Waste Disposal Landfills; Agricultural Chemical Manufacture &amp; Application Firms; Analytical Laboratories; Treatment, Storage, Disposal Facilities; Warehouse-Transportation Systems; Electronics Semiconductor Industry; Workplace Health and Safety Support; Energy &amp; Environmental Audit/Inventories</p>	College class	1.5 units	Sac City College	Sacramento	\$20/unit	Yes	<a href="http://www.scc.losrios.edu/Documents/catalog/sccatalog09-10.pdf">http://www.scc.losrios.edu/Documents/catalog/sccatalog09-10.pdf</a>
MET 256 Fundamentals of Instruments and Electricity	<p>This course introduces the student to the fundamentals of electrical instruments and concepts required in commercial and industrial practice. Units of instruction include: fundamentals of electricity, ohms law, use of voltmeters, ammeters, ohmmeters, series and parallel circuits, wiring diagrams, and electromagnetic theory. Components of this course may be offered online. Students may be required to have access to a computer and the Internet and have some familiarity with a computer.</p>	Mechanical-Electrical Technology A.S.; Certification of Achievement		<p>Students interested in the following career options: Engineering/Consulting Firms; Governmental Compliance Agencies; Solid Waste Disposal Landfills; Agricultural Chemical Manufacture &amp; Application Firms; Analytical Laboratories; Treatment, Storage, Disposal Facilities; Warehouse-Transportation Systems; Electronics Semiconductor Industry; Workplace Health and Safety Support; Energy &amp; Environmental Audit/Inventories</p>	College class	1.5 units	Sac City College	Sacramento	\$20/unit	Yes	<a href="http://www.scc.losrios.edu/Documents/catalog/sccatalog09-10.pdf">http://www.scc.losrios.edu/Documents/catalog/sccatalog09-10.pdf</a>

MET 257 Fundamentals of Workplace Success	This course provides the student with basic workplace skills needed to enter the workforce as a machinery systems technician. Units of instruction include teamwork, ethics, diversity, communication skills, writing e-mail messages, Internet websites, conflict resolution, critical thinking, problem solving, conflict resolution, career management, sexual harassment, and drug and alcohol use. Components of this course will be offered online. Students will be required to have access to a computer and the Internet and have some familiarity with a computer.	Mechanical-Electrical Technology A.S.; Certification of Achievement	Students interested in the following career options: Engineering/Consulting Firms; Governmental Compliance Agencies; Solid Waste Disposal Landfills; Agricultural Chemical Manufacture & Application Firms; Analytical Laboratories; Treatment, Storage, Disposal Facilities; Warehouse-Transportation Systems; Electronics Semiconductor Industry; Workplace Health and Safety Support; Energy & Environmental Audit/Inventories	College class	1.5 units	Sac City College	Sacramento	\$20/unit	Yes	<a href="http://www.scc.losrios.edu/Documents/catalog/scccatalog09-10.pdf">http://www.scc.losrios.edu/Documents/catalog/scccatalog09-10.pdf</a>
MET 294 Topics in Mechanical Electrical Technology	This is a specialized course which has been developed in cooperation with industry to address emerging training needs. This course may be taken no more than three times for credit provided there is no duplication of topics.	Mechanical-Electrical Technology A.S.; Certification of Achievement	Students interested in the following career options: Engineering/Consulting Firms; Governmental Compliance Agencies; Solid Waste Disposal Landfills; Agricultural Chemical Manufacture & Application Firms; Analytical Laboratories; Treatment, Storage, Disposal Facilities; Warehouse-Transportation Systems; Electronics Semiconductor Industry; Workplace Health and Safety Support; Energy & Environmental Audit/Inventories	College class	.5-4 units	Sac City College	Sacramento			
MET 295 Independent Studies in 1-3 Units Mechanical-Electrical Technology		Mechanical-Electrical Technology A.S.; Certification of Achievement	Students interested in the following career options: Engineering/Consulting Firms; Governmental Compliance Agencies; Solid Waste Disposal Landfills; Agricultural Chemical Manufacture & Application Firms; Analytical Laboratories; Treatment, Storage, Disposal Facilities; Warehouse-Transportation Systems; Electronics Semiconductor Industry; Workplace Health and Safety Support; Energy & Environmental Audit/Inventories	College class	1-3 units	Sac City College	Sacramento			
MET 351 Basic Mechanical Systems	This course is designed to introduce the student to the theoretical and practical applications of basic mechanical systems utilized in refrigeration, heating, cooling, steam power generation, photovoltaic and hot water solar systems, and the treatment of water for use in mechanical systems, drinking water, and wastewater treatment plants. Additional studies include fundamental laws of heat; theory of refrigeration and refrigerants; installation, operation, and testing of refrigeration units; and safe, efficient use of related hand, heat, and power tools. Components of this course may be offered online. Students may be required to have access to a computer and the Internet and have some familiarity with a computer.	Mechanical-Electrical Technology A.S.; Certification of Achievement	Students interested in the following career options: Engineering/Consulting Firms; Governmental Compliance Agencies; Solid Waste Disposal Landfills; Agricultural Chemical Manufacture & Application Firms; Analytical Laboratories; Treatment, Storage, Disposal Facilities; Warehouse-Transportation Systems; Electronics Semiconductor Industry; Workplace Health and Safety Support; Energy & Environmental Audit/Inventories	College class	5 units	Sac City College	Sacramento			
MET 352 Mechanical Systems Calculations	This course focuses on building mathematical skills specific to the mechanical-electrical trades; problem solving using metric (SI) units and English and metric unit conversions; solution of word problems involving length, area, volume, weight, strength of materials, work, power, energy, and efficiencies; exponents, scientific notation, and roots; problem solving using graphs and tables; algebraic solutions to applied problems; freehand sketching employing multiview, isometric, and oblique drawing methods; and lettering and dimensioning. Components of this course may be offered online. Students may be required to have access to a computer and the Internet and have some familiarity with a computer.	Mechanical-Electrical Technology A.S.; Certification of Achievement	Students interested in the following career options: Engineering/Consulting Firms; Governmental Compliance Agencies; Solid Waste Disposal Landfills; Agricultural Chemical Manufacture & Application Firms; Analytical Laboratories; Treatment, Storage, Disposal Facilities; Warehouse-Transportation Systems; Electronics Semiconductor Industry; Workplace Health and Safety Support; Energy & Environmental Audit/Inventories	College class	4 units	Sac City College	Sacramento			

MET 353 Water Treatment Plant Calculations	This course focuses on mathematical problems involving English and metric units concerned with water treatment plant operation and maintenance. Emphasis will be placed on the basic mathematical skills required to prepare and take the Water Treatment Plant Operator Certification Examinations. Components of this course may be offered online. Students may be required to have access to a computer and the Internet and have some familiarity with a computer.	Mechanical-Electrical Technology A.S.; Certification of Achievement	Students interested in the following career options: Engineering/Consulting Firms; Governmental Compliance Agencies; Solid Waste Disposal Landfills; Agricultural Chemical Manufacture & Application Firms; Analytical Laboratories; Treatment, Storage, Disposal Facilities; Warehouse-Transportation Systems; Electronics Semiconductor Industry; Workplace Health and Safety Support; Energy & Environmental Audit/Inventories	College class	3 units	Sac City College	Sacramento		
MET 354 Wastewater Treatment 3 Units Plant Calculations	This course focuses on mathematical problems involving English and metric units concerned with wastewater treatment plant operation and maintenance. Emphasis will be placed on the basic mathematical skills required to prepare and take the Wastewater Treatment Plant Operator Certification Examinations. Components of this course may be offered online. Students may be required to have access to a computer and the Internet and have some familiarity with a computer.	Mechanical-Electrical Technology A.S.; Certification of Achievement	Students interested in the following career options: Engineering/Consulting Firms; Governmental Compliance Agencies; Solid Waste Disposal Landfills; Agricultural Chemical Manufacture & Application Firms; Analytical Laboratories; Treatment, Storage, Disposal Facilities; Warehouse-Transportation Systems; Electronics Semiconductor Industry; Workplace Health and Safety Support; Energy & Environmental Audit/Inventories	College class	3 units	Sac City College	Sacramento		
MET 355 Water Treatment Plant Operation and Maintenance I	This is the first of three courses (see MET 365 and MET 375) that focus on water resources and their preservation; water treatment systems and processes; system components; and related operation and safety practices. The emphasis of this course is safety and the effective operation and maintenance of a water treatment facility. Components of this course may be offered online. Students may be required to have access to a computer and the Internet and have some familiarity with a computer.	Mechanical-Electrical Technology A.S.; Certification of Achievement	Students interested in the following career options: Engineering/Consulting Firms; Governmental Compliance Agencies; Solid Waste Disposal Landfills; Agricultural Chemical Manufacture & Application Firms; Analytical Laboratories; Treatment, Storage, Disposal Facilities; Warehouse-Transportation Systems; Electronics Semiconductor Industry; Workplace Health and Safety Support; Energy & Environmental Audit/Inventories	College class	3 units	Sac City College	Sacramento		
MET 356 Wastewater Treatment Plant Operation and Maintenance I	This is the first of three courses (see MET 366 and MET 376) that focus on water resources and their preservation; wastewater treatment systems and processes; system components; and related operation and safety practices. Components of this course may be offered online. Students may be required to have access to a computer and the Internet and have some familiarity with a computer.	Mechanical-Electrical Technology A.S.; Certification of Achievement	Students interested in the following career options: Engineering/Consulting Firms; Governmental Compliance Agencies; Solid Waste Disposal Landfills; Agricultural Chemical Manufacture & Application Firms; Analytical Laboratories; Treatment, Storage, Disposal Facilities; Warehouse-Transportation Systems; Electronics Semiconductor Industry; Workplace Health and Safety Support; Energy & Environmental Audit/Inventories	College class	3 units	Sac City College	Sacramento		
MET 361 Refrigeration Systems	This is a course devoted to the study of residential and commercial refrigeration systems and equipment. Students learn about mechanical compression and absorption refrigeration devices; their operating characteristics, common applications and typical servicing procedures, and related safety practices. Hand tools, power tools, and test instruments are used by the student in lab to repair and service refrigeration devices. Students gain additional experience by analyzing system performance with pressure-enthalpy diagrams.	Mechanical-Electrical Technology A.S.; Certification of Achievement	Students interested in the following career options: Engineering/Consulting Firms; Governmental Compliance Agencies; Solid Waste Disposal Landfills; Agricultural Chemical Manufacture & Application Firms; Analytical Laboratories; Treatment, Storage, Disposal Facilities; Warehouse-Transportation Systems; Electronics Semiconductor Industry; Workplace Health and Safety Support; Energy & Environmental Audit/Inventories	College class	4 units	Sac City College	Sacramento	\$20/unit	Yes

<http://www.scc.losrios.edu/Documents/catalog/sccatalog08-09.pdf>

MET 362 Refrigeration Systems Calculations	This course focuses on mathematical problems involving English and metric (SI) units concerned with installation, operations, and maintenance of commercial and industrial refrigeration systems. Emphasis will be placed on basic heat transfer, loads, piping, equipment performance, and economic factors.	Mechanical-Electrical Technology A.S.; Certification of Achievement	Water and Energy	Students interested in the following career options: Engineering/Consulting Firms; Governmental Compliance Agencies; Solid Waste Disposal Landfills; Agricultural Chemical Manufacture & Application Firms; Analytical Laboratories; Treatment, Storage, Disposal Facilities; Warehouse-Transportation Systems; Electronics Semiconductor Industry; Workplace Health and Safety Support; Energy & Environmental Audit/Inventories	College class	3 Units	Sac City College	Sacramento	\$20/unit	Yes	<a href="http://www.scc.losrios.edu/Documents/catalog/scccatalog08-09.pdf">http://www.scc.losrios.edu/Documents/catalog/scccatalog08-09.pdf</a>
MET 363 Refrigerant Transition and Recovery Processes and Procedures	This course focuses on the recovery and recycling of existing refrigerants, the transition to environmentally safe refrigerants, and the preparation for certification testing in refrigerant handling as mandated by the Clean Air Act, 40 CFR, part 82, subpart F and regulated by the Environmental Protection Agency (EPA).	Mechanical-Electrical Technology A.S.; Certification of Achievement	Water and Energy	Students interested in the following career options: Engineering/Consulting Firms; Governmental Compliance Agencies; Solid Waste Disposal Landfills; Agricultural Chemical Manufacture & Application Firms; Analytical Laboratories; Treatment, Storage, Disposal Facilities; Warehouse-Transportation Systems; Electronics Semiconductor Industry; Workplace Health and Safety Support; Energy & Environmental Audit/Inventories	College class	1.5 units	Sac City College	Sacramento	\$20/unit	Yes	<a href="http://www.scc.losrios.edu/Documents/catalog/scccatalog08-09.pdf">http://www.scc.losrios.edu/Documents/catalog/scccatalog08-09.pdf</a>
MET 364 Electrical Controls	This course is an introduction to power and control circuits and devices used with refrigeration, heating, cooling, pumping, water treating and solar heating machinery systems. Units of instruction include a study of electron theory, magnetism, induction, alternating current, direct current, resistance and capacitance. Practice using electrical meters and test instruments in laboratory classes along with related safety practices will also be covered.	Mechanical-Electrical Technology A.S.; Certification of Achievement	Water and Energy	Students interested in the following career options: Engineering/Consulting Firms; Governmental Compliance Agencies; Solid Waste Disposal Landfills; Agricultural Chemical Manufacture & Application Firms; Analytical Laboratories; Treatment, Storage, Disposal Facilities; Warehouse-Transportation Systems; Electronics Semiconductor Industry; Workplace Health and Safety Support; Energy & Environmental Audit/Inventories	College class	4 Units	Sac City College	Sacramento	\$20/unit	Yes	<a href="http://www.scc.losrios.edu/Documents/catalog/scccatalog08-09.pdf">http://www.scc.losrios.edu/Documents/catalog/scccatalog08-09.pdf</a>
MET 365 Water Treatment Plant Operation and Maintenance II	This is the second of three courses (see MET 355 and MET 375) that focus on water resources and their preservation; water treatment systems and processes; system components; and related operation and safety practices. The emphasis of this course is on information needed by operators for the management and operation of water treatment facilities. Components of this course may be offered online. Students may be required to have access to a computer and the Internet and have some familiarity with a computer.	Mechanical-Electrical Technology A.S.; Certification of Achievement		Students interested in the following career options: Engineering/Consulting Firms; Governmental Compliance Agencies; Solid Waste Disposal Landfills; Agricultural Chemical Manufacture & Application Firms; Analytical Laboratories; Treatment, Storage, Disposal Facilities; Warehouse-Transportation Systems; Electronics Semiconductor Industry; Workplace Health and Safety Support; Energy & Environmental Audit/Inventories	College class	3 units	Sac City College	Sacramento			
MET 366 Wastewater Treatment Plant Operation and Maintenance II	This is the second of three courses (see MET 356 and MET 376) that focus on water resources and their preservation; wastewater treatment systems and processes; system components; related operation and safety practices. The emphasis of this course is on larger conventional wastewater treatment facilities. Components of this course may be offered online. Students may be required to have access to a computer and the Internet and have some familiarity	Mechanical-Electrical Technology A.S.; Certification of Achievement		Students interested in the following career options: Engineering/Consulting Firms; Governmental Compliance Agencies; Solid Waste Disposal Landfills; Agricultural Chemical Manufacture & Application Firms; Analytical Laboratories; Treatment, Storage, Disposal Facilities; Warehouse-Transportation Systems; Electronics Semiconductor Industry; Workplace Health and Safety Support; Energy & Environmental Audit/Inventories	College class	3 units	Sac City College	Sacramento			



MET 368 Heat Pump Operation and Maintenance	This course provides instruction in basic refrigeration and heat pump theory, cooling and heating cycles, defrost cycles, controls, supplemental heat, flow control devices, and heat load calculations. Components of this course may be offered online. Students may be required to have access to a computer and the Internet and have some familiarity with a computer.	Mechanical-Electrical Technology A.S.; Certification of Achievement	Students interested in the following career options: Engineering/Consulting Firms; Governmental Compliance Agencies; Solid Waste Disposal Landfills; Agricultural Chemical Manufacture & Application Firms; Analytical Laboratories; Treatment, Storage, Disposal Facilities; Warehouse-Transportation Systems; Electronics Semiconductor Industry; Workplace Health and Safety Support; Energy & Environmental Audit/Inventories	College class	3 units	Sac City College	Sacramento				
MET 371 Heating and Power Machinery	This course provides instruction in warm air furnaces, hydronic heating, steam and power plant systems. Instruction includes pumps, pumping head calculations, combustion principles, steam and hot water boilers, warm air furnaces, boiler safety and operating controls, boiler emissions. Laboratory activities include operation, testing, maintenance and troubleshooting of warm air furnaces and steam/hot water heating systems. Components of this course may be offered online. Students may be required to have access to a computer and the Internet and have some familiarity with a computer.	Mechanical-Electrical Technology A.S.; Certification of Achievement	Water and Energy	Students interested in the following career options: Engineering/Consulting Firms; Governmental Compliance Agencies; Solid Waste Disposal Landfills; Agricultural Chemical Manufacture & Application Firms; Analytical Laboratories; Treatment, Storage, Disposal Facilities; Warehouse-Transportation Systems; Electronics Semiconductor Industry; Workplace Health and Safety Support; Energy & Environmental Audit/Inventories	College class	4 units	Sac City College	Sacramento	\$20/unit	Yes	<a href="http://www.scc.losrios.edu/Documents/catalog/scccatalog08-09.pdf">http://www.scc.losrios.edu/Documents/catalog/scccatalog08-09.pdf</a>
MET 372 Power Machinery, Heating and Air Conditioning Calculations	This course focuses on mathematical problems involving English and metric (SI) units concerned with installation, operation, and maintenance of power machinery, and heating and air conditioning systems. Emphasis will be placed on heat transfer, heating/cooling loads, pipe and pump sizing, steam and hot water system performance, psychrometrics, and duct sizing calculations.	Mechanical-Electrical Technology A.S.; Certification of Achievement	Water and Energy	Students interested in the following career options: Engineering/Consulting Firms; Governmental Compliance Agencies; Solid Waste Disposal Landfills; Agricultural Chemical Manufacture & Application Firms; Analytical Laboratories; Treatment, Storage, Disposal Facilities; Warehouse-Transportation Systems; Electronics Semiconductor Industry; Workplace Health and Safety Support; Energy & Environmental Audit/Inventories	College class	3 units	Sac City College	Sacramento	\$20/unit	Yes	<a href="http://www.scc.losrios.edu/Documents/catalog/scccatalog08-09.pdf">http://www.scc.losrios.edu/Documents/catalog/scccatalog08-09.pdf</a>
MET 373 Piping, Electrical, and Sheet Metal Drafting	This course provides instruction in the design and construction of mechanical and piping systems. Units of instruction include mechanical and plumbing codes, basic sketching techniques, recognition of standard symbols, computer aided drawing applications, and construction terms and specifications.	Mechanical-Electrical Technology A.S.; Certification of Achievement	Water and Energy	Students interested in the following career options: Engineering/Consulting Firms; Governmental Compliance Agencies; Solid Waste Disposal Landfills; Agricultural Chemical Manufacture & Application Firms; Analytical Laboratories; Treatment, Storage, Disposal Facilities; Warehouse-Transportation Systems; Electronics Semiconductor Industry; Workplace Health and Safety Support; Energy & Environmental Audit/Inventories	College class	4 units	Sac City College	Sacramento	\$20/unit	Yes	<a href="http://www.scc.losrios.edu/Documents/catalog/scccatalog08-09.pdf">http://www.scc.losrios.edu/Documents/catalog/scccatalog08-09.pdf</a>
MET 374 Automatic Control Systems I	This is the first of two courses (see MET 384) that focus on the study of controls and devices used in heating, ventilation, air conditioning, pumping, water treatment, and manufacturing systems. Units of instruction include introduction to control theory, final controls devices, and pneumatic control systems. Components of this course may be offered online. Students may be required to have access to a computer and the Internet and have some familiarity with a computer.	Mechanical-Electrical Technology A.S.; Certification of Achievement	Students interested in the following career options: Engineering/Consulting Firms; Governmental Compliance Agencies; Solid Waste Disposal Landfills; Agricultural Chemical Manufacture & Application Firms; Analytical Laboratories; Treatment, Storage, Disposal Facilities; Warehouse-Transportation Systems; Electronics Semiconductor Industry; Workplace Health and Safety Support; Energy & Environmental Audit/Inventories	College class	3 units	Sac City College	Sacramento	\$20/unit	Yes	<a href="http://www.scc.losrios.edu/Documents/catalog/scccatalog08-09.pdf">http://www.scc.losrios.edu/Documents/catalog/scccatalog08-09.pdf</a>	

MET 375 Water Treatment Plant Operation and Maintenance III	<p>This is the third of three courses (see MET 355 and MET 365) that focus on water resources and their preservation; water treatment systems and processes; system components; and related operation and safety practices. The emphasis of this course is on small water treatment facilities. Components of this course may be offered online. Students may be required to have access to a computer and the Internet and have some familiarity with a computer.</p>	<p>Mechanical-Electrical Technology A.S.; Certification of Achievement</p>	<p>Students interested in the following career options: Engineering/Consulting Firms; Governmental Compliance Agencies; Solid Waste Disposal Landfills; Agricultural Chemical Manufacture &amp; Application Firms; Analytical Laboratories; Treatment, Storage, Disposal Facilities; Warehouse-Transportation Systems; Electronics Semiconductor Industry; Workplace Health and Safety Support; Energy &amp; Environmental Audit/Inventories</p>	College class	3 units	Sac City College	Sacramento	\$20/unit	Yes	<a href="http://www.scc.losrios.edu/Documents/catalog/scccatalog08-09.pdf">http://www.scc.losrios.edu/Documents/catalog/scccatalog08-09.pdf</a>
MET 376 Wastewater Treatment Plant Operation and Maintenance III	<p>This is the third of three courses (see MET 356 and MET 366) that focus on water resources and their preservation; wastewater treatment systems and processes; system components; related operation and safety practices. The emphasis of this course is on larger secondary and tertiary wastewater treatment facilities. Components of this course may be offered online. Students may be required to have access to a computer and the Internet and have some familiarity with a computer.</p>	<p>Mechanical-Electrical Technology A.S.; Certification of Achievement</p>	<p>Students interested in the following career options: Engineering/Consulting Firms; Governmental Compliance Agencies; Solid Waste Disposal Landfills; Agricultural Chemical Manufacture &amp; Application Firms; Analytical Laboratories; Treatment, Storage, Disposal Facilities; Warehouse-Transportation Systems; Electronics Semiconductor Industry; Workplace Health and Safety Support; Energy &amp; Environmental Audit/Inventories</p>	College class	3 units	Sac City College	Sacramento	\$20/unit	Yes	<a href="http://www.scc.losrios.edu/Documents/catalog/scccatalog08-09.pdf">http://www.scc.losrios.edu/Documents/catalog/scccatalog08-09.pdf</a>
MET 378 Geothermal Heat Pump Operation and Maintenance	<p>This course provides instruction in basic geothermal heat pump theory, cooling and heating cycles, load calculations, cost analysis, open and closed water loop systems, system diagnostics, and solar applications. Components of this course may be offered online. Students may be required to have access to a computer and the Internet and have some familiarity with a computer.</p>	<p>Mechanical-Electrical Technology A.S.; Certification of Achievement</p>	<p>Students interested in the following career options: Engineering/Consulting Firms; Governmental Compliance Agencies; Solid Waste Disposal Landfills; Agricultural Chemical Manufacture &amp; Application Firms; Analytical Laboratories; Treatment, Storage, Disposal Facilities; Warehouse-Transportation Systems; Electronics Semiconductor Industry; Workplace Health and Safety Support; Energy &amp; Environmental Audit/Inventories</p>	College class	3 units	Sac City College	Sacramento	\$20/unit	Yes	<a href="http://www.scc.losrios.edu/Documents/catalog/scccatalog08-09.pdf">http://www.scc.losrios.edu/Documents/catalog/scccatalog08-09.pdf</a>
MET 381 Air Conditioning	<p>This course provides instruction in the design, operation, and maintenance of commercial and industrial air conditioning systems. Instruction includes study of air distribution, variable air volume systems, refrigeration compressors, absorption air condition systems, helical-rotary and centrifugal water chillers, chilled water systems, thermal storage, cooling towers, photovoltaic and hot water solar systems, and energy management. Students will gain practical experience by operating commercial air conditioning systems. Components of this course may be offered online. Students may be required to have access to a computer and the Internet and have some familiarity with a computer.</p>	<p>Mechanical-Electrical Technology A.S.; Certification of Achievement</p>	<p>Students interested in the following career options: Engineering/Consulting Firms; Governmental Compliance Agencies; Solid Waste Disposal Landfills; Agricultural Chemical Manufacture &amp; Application Firms; Analytical Laboratories; Treatment, Storage, Disposal Facilities; Warehouse-Transportation Systems; Electronics Semiconductor Industry; Workplace Health and Safety Support; Energy &amp; Environmental Audit/Inventories</p>	College class	4 units	Sac City College	Sacramento	\$20/unit	Yes	<a href="http://www.scc.losrios.edu/Documents/catalog/scccatalog08-09.pdf">http://www.scc.losrios.edu/Documents/catalog/scccatalog08-09.pdf</a>
MET 382 Air Conditioning Systems Calculations	<p>This course provides an introduction to the use of computer applications in solving problems concerned with the design, installation, and operation of air conditioning systems. Units of instruction include calculating heating and cooling loads, piping, air distribution, equipment selection, psychometric and economic analysis. Components of this course may be offered online. Students may be required to have access to a computer and the Internet and have some familiarity with a computer.</p>	<p>Mechanical-Electrical Technology A.S.; Certification of Achievement</p>	<p>Students interested in the following career options: Engineering/Consulting Firms; Governmental Compliance Agencies; Solid Waste Disposal Landfills; Agricultural Chemical Manufacture &amp; Application Firms; Analytical Laboratories; Treatment, Storage, Disposal Facilities; Warehouse-Transportation Systems; Electronics Semiconductor Industry; Workplace Health and Safety Support; Energy &amp; Environmental Audit/Inventories</p>	College class	3 units	Sac City College	Sacramento	\$20/unit	Yes	<a href="http://www.scc.losrios.edu/Documents/catalog/scccatalog08-09.pdf">http://www.scc.losrios.edu/Documents/catalog/scccatalog08-09.pdf</a>

MET 383 Instrumentation	<p>This course provides instruction in the theory and practice of using instruments for testing and analyzing the operation of refrigerating, air conditioning, mechanical, electrical, and building systems. Units of instruction include a study of measurement principles including temperature, humidity, flow, light, sound, velocity, pressure, combustion emissions, air quality, voltage, level, force, and vibration. Laboratory activities will emphasize the practical applications of sensors and measuring instruments. Components of this course may be offered online. Students may be required to have access to a computer and the Internet and have some familiarity with a computer.</p>	Mechanical-Electrical Technology A.S.; Certification of Achievement	<p>Students interested in the following career options: Engineering/Consulting Firms; Governmental Compliance Agencies; Solid Waste Disposal Landfills; Agricultural Chemical Manufacture &amp; Application Firms; Analytical Laboratories; Treatment, Storage, Disposal Facilities; Warehouse-Transportation Systems; Electronics Semiconductor Industry; Workplace Health and Safety Support; Energy &amp; Environmental Audit/Inventories</p>	College class	4 units	Sac City College	Sacramento	\$20/unit	Yes	<a href="http://www.scc.losrios.edu/Documents/catalog/scccatalog08-09.pdf">http://www.scc.losrios.edu/Documents/catalog/scccatalog08-09.pdf</a>
MET 384 Automatic Control Systems II	<p>This is the second of two courses (see MET 374) that focus on the study of controls and devices used in heating, ventilation, air conditioning, pumping, water treatment, and manufacturing systems. Units of instruction include electronic and direct digital controls, networks, interoperable systems, and programming of controllers. Components of this course may be offered online. Students may be required to have access to a computer and the Internet and have some familiarity with a computer.</p>	Mechanical-Electrical Technology A.S.; Certification of Achievement	<p>Students interested in the following career options: Engineering/Consulting Firms; Governmental Compliance Agencies; Solid Waste Disposal Landfills; Agricultural Chemical Manufacture &amp; Application Firms; Analytical Laboratories; Treatment, Storage, Disposal Facilities; Warehouse-Transportation Systems; Electronics Semiconductor Industry; Workplace Health and Safety Support; Energy &amp; Environmental Audit/Inventories</p>	College class	3 units	Sac City College	Sacramento	\$20/unit	Yes	<a href="http://www.scc.losrios.edu/Documents/catalog/scccatalog08-09.pdf">http://www.scc.losrios.edu/Documents/catalog/scccatalog08-09.pdf</a>
MET 391 Mechanical Systems Commissioning	<p>This course focuses on the techniques and practices of commissioning controls and mechanical systems that are used in heating, ventilation, air conditioning, pumping, renewable and sustainable energy, and water treatment. Units of instruction include energy conservation; developing and implementing a comprehensive commissioning plan; inspection and testing of control systems, mechanical equipment, field devices and user interfaces to ensure that they are installed, programmed, and operated precisely as the design intent. Components of this course may be offered online. Students may be required to have access to a computer and the Internet and have some familiarity with a computer.</p>	Mechanical-Electrical Technology A.S.; Certification of Achievement	<p>Students interested in the following career options: Engineering/Consulting Firms; Governmental Compliance Agencies; Solid Waste Disposal Landfills; Agricultural Chemical Manufacture &amp; Application Firms; Analytical Laboratories; Treatment, Storage, Disposal Facilities; Warehouse-Transportation Systems; Electronics Semiconductor Industry; Workplace Health and Safety Support; Energy &amp; Environmental Audit/Inventories</p>	College class	3 units	Sac City College	Sacramento	\$20/unit	Yes	<a href="http://www.scc.losrios.edu/Documents/catalog/scccatalog08-09.pdf">http://www.scc.losrios.edu/Documents/catalog/scccatalog08-09.pdf</a>
MET 395 Water Treatment for Heating and Air Conditioning Equipment	<p>This course focuses on basic mechanical system water sides theories of corrosion, scaling, and algae-slime growth-corrosion inhibition, chemicals and feed-bleed-blowdown systems; scaling inhibition, chemicals, and feed-blowdown systems; algae inhibition and chemicals; testing methods, kits, and instruments; and water quality standards. Components of this course may be offered online. Students may be required to have access to a computer and the Internet and have some familiarity with a computer.</p>	Mechanical-Electrical Technology A.S.; Certification of Achievement	<p>Students interested in the following career options: Engineering/Consulting Firms; Governmental Compliance Agencies; Solid Waste Disposal Landfills; Agricultural Chemical Manufacture &amp; Application Firms; Analytical Laboratories; Treatment, Storage, Disposal Facilities; Warehouse-Transportation Systems; Electronics Semiconductor Industry; Workplace Health and Safety Support; Energy &amp; Environmental Audit/Inventories</p>	College class	3 units	Sac City College	Sacramento	\$20/unit	Yes	<a href="http://www.scc.losrios.edu/Documents/catalog/scccatalog08-09.pdf">http://www.scc.losrios.edu/Documents/catalog/scccatalog08-09.pdf</a>
MET 396 Air and Water Balance of Mechanical Equipment	<p>This course focuses on air and water flow theory; air and water systems and components; air flow measuring instruments, their calibration, and use; and typical water flow balance work. Components of this course may be offered online. Students may be required to have access to a computer and the Internet and have some familiarity with a computer.</p>	Mechanical-Electrical Technology A.S.; Certification of Achievement	<p>Students interested in the following career options: Engineering/Consulting Firms; Governmental Compliance Agencies; Solid Waste Disposal Landfills; Agricultural Chemical Manufacture &amp; Application Firms; Analytical Laboratories; Treatment, Storage, Disposal Facilities; Warehouse-Transportation Systems; Electronics Semiconductor Industry; Workplace Health and Safety Support; Energy &amp; Environmental Audit/Inventories</p>	College class	3 units	Sac City College	Sacramento	\$20/unit	Yes	<a href="http://www.scc.losrios.edu/Documents/catalog/scccatalog08-09.pdf">http://www.scc.losrios.edu/Documents/catalog/scccatalog08-09.pdf</a>

MET 397 Basic Potable Water and Wastewater Treatment Processes	This course focuses on water resources and their preservation; potable water treatment systems and processes; system components; wastewater treatment systems and processes; related operation and safety practices.	Mechanical-Electrical Technology A.S.; Certification of Achievement	Students interested in the following career options: Engineering/Consulting Firms; Governmental Compliance Agencies; Solid Waste Disposal Landfills; Agricultural Chemical Manufacture & Application Firms; Analytical Laboratories; Treatment, Storage, Disposal Facilities; Warehouse-Transportation Systems; Electronics Semiconductor Industry; Workplace Health and Safety Support; Energy & Environmental Audit/Inventories	College class	3 units	Sac City College	Sacramento	\$20/unit	Yes	<a href="http://www.scc.losrios.edu/Documents/catalog/scccatalog08-09.pdf">http://www.scc.losrios.edu/Documents/catalog/scccatalog08-09.pdf</a>
MET 495 Independent Studies in Mechanical-Electrical Technology		Mechanical-Electrical Technology A.S.; Certification of Achievement	Students interested in the following career options: Engineering/Consulting Firms; Governmental Compliance Agencies; Solid Waste Disposal Landfills; Agricultural Chemical Manufacture & Application Firms; Analytical Laboratories; Treatment, Storage, Disposal Facilities; Warehouse-Transportation Systems; Electronics Semiconductor Industry; Workplace Health and Safety Support; Energy & Environmental Audit/Inventories	College class	1-3 Units	Sac City College	Sacramento	\$20/unit	Yes	<a href="http://www.scc.losrios.edu/Documents/catalog/scccatalog08-09.pdf">http://www.scc.losrios.edu/Documents/catalog/scccatalog08-09.pdf</a>
MET 499 Experimental Offering in Mechanical-Electrical Technology		Mechanical-Electrical Technology A.S.; Certification of Achievement	Students interested in the following career options: Engineering/Consulting Firms; Governmental Compliance Agencies; Solid Waste Disposal Landfills; Agricultural Chemical Manufacture & Application Firms; Analytical Laboratories; Treatment, Storage, Disposal Facilities; Warehouse-Transportation Systems; Electronics Semiconductor Industry; Workplace Health and Safety Support; Energy & Environmental Audit/Inventories	College class	.5-4 Units	Sac City College	Sacramento	\$20/unit	Yes	<a href="http://www.scc.losrios.edu/Documents/catalog/scccatalog08-09.pdf">http://www.scc.losrios.edu/Documents/catalog/scccatalog08-09.pdf</a>
EVT 130 Electric Vehicle Batteries	This course introduces students to current battery technology as it relates to electric vehicles. Students will be instructed on the various types of batteries found in automobiles, motorcycles, aircraft and marine batteries. Emphasis will be placed on battery theory, safety, handling, construction and maintenance.	Electric Vehicle Technology Program	Alternative Vehicles	College class	3 units	Sac City College	Sacramento	\$20/unit	Yes	<a href="http://www.scc.losrios.edu/Current_Students/From_Enrollment_to_Graduation/Catalog/Degrees_Certificates_Courses_and_Transfer_Majors/Electric_Vehicle_Technology.htm">http://www.scc.losrios.edu/Current_Students/From_Enrollment_to_Graduation/Catalog/Degrees_Certificates_Courses_and_Transfer_Majors/Electric_Vehicle_Technology.htm</a>
EVT 110 Introduction to Electric 4 Units Vehicle Conversions	This course will cover the theory and actual conversion of an internal combustion engine (ICE) to a battery powered electric vehicle. Topics to be covered are the process of conversion of an ICE vehicle to electric power, to include modifications, assembly, operation, testing and general maintenance of electric vehicles.	Electric Vehicle Technology Program	Alternative Vehicles	College class	4 units	Sac City College	Sacramento	\$20/unit	Yes	<a href="http://www.scc.losrios.edu/Current_Students/From_Enrollment_to_Graduation/Catalog/Degrees_Certificates_Courses_and_Transfer_Majors/Electric_Vehicle_Technology.htm">http://www.scc.losrios.edu/Current_Students/From_Enrollment_to_Graduation/Catalog/Degrees_Certificates_Courses_and_Transfer_Majors/Electric_Vehicle_Technology.htm</a>
EVT 100 Introduction to Electric Vehicles	This course will provide an overview of the electric vehicle and hybrid technology. The topics covered will include electric vehicle technology, hybrid technology, economics, regulations, environmental impact, and safety.	Electric Vehicle Technology Program	Alternative Vehicles	College class	3 units	Sac City College	Sacramento	\$20/unit	Yes	<a href="http://www.scc.losrios.edu/Current_Students/From_Enrollment_to_Graduation/Catalog/Degrees_Certificates_Courses_and_Transfer_Majors/Electric_Vehicle_Technology.htm">http://www.scc.losrios.edu/Current_Students/From_Enrollment_to_Graduation/Catalog/Degrees_Certificates_Courses_and_Transfer_Majors/Electric_Vehicle_Technology.htm</a>
AERO 130 Bio-Diesel for Aircraft 1 Unit Ground-Based Transportation	This course will take the student through the theory of the manufacture of Bio-Diesel to include a demonstration of the actual process. The course will cover the required steps from the initial procurement of the raw materials through the storing of the finished product. The product can be utilized in diesel engines to include aviation, locomotive, automotive, marine, and stationary applications.	Aeronautics	Renewables	College class	1 unit	Sac City College	Sacramento	\$20/unit	Yes	<a href="http://www.scc.losrios.edu/Documents/catalog/programs/aero.pdf">http://www.scc.losrios.edu/Documents/catalog/programs/aero.pdf</a>

												Upon completion of the MET program, students may find employment in the following industry sectors: government (federal, state, county, and city agencies), health care, utilities, construction, facilities management, engineering, high technology, food production, and manufacturing. Typical jobs titles include: water treatment plant operator, wastewater treatment plant operator, stationary engineer, maintenance mechanic, and automatic control technician.
Water and Wastewater Treatment Plant Operation	This program focuses on water resources and their preservation, water treatment plant operation and systems, wastewater treatment plant operation and systems, water treatment system components, processes, regulations, and safety practices. In addition, the entire spectrum of mechanical and electrical systems will be covered including energy management, mechanical system commissioning, indoor air quality, building automation systems, refrigerant recovery and management, electrical controls, pneumatic controls, electronic controls, and instrumentation. Effective writing, verbal communication, electronic communication, sketching, drafting, mathematical calculations and computer skills will be stressed throughout the program.	Mechanical-Electrical Technology: Water and Wastewater Treatment Plant Operation A.S. or Certificate	Water and Energy		college program	55.5 units	Sac City College	Sacramento	\$20/unit	Yes		<a href="http://www.scc.losrios.edu/Documents/catalog/programs/met.pdf">http://www.scc.losrios.edu/Documents/catalog/programs/met.pdf</a>
HVAC Building Commissioning (Energy Management Systems) Renewable and Sustainable Energy (Solar Hot Water and Photovoltaic)			HVAC		College Program		Sac City College	Sacramento	\$20/unit	Fall 2011		<a href="http://www.losrios.edu/downloads/GreenForce-3-31-09.pdf">http://www.losrios.edu/downloads/GreenForce-3-31-09.pdf</a>
	Expands on the fundamentals of photovoltaics with a focus on system design and installation of grid-connected residential and small commercial systems. Topics include detailed system sizing, array layout, mounting on various roof constructions, mechanical and electrical integration as well as related electrical codes and workplace safety standards. This course, taken with ESS 30, prepares students to sit for the NABCEP PV Entry Level Certificate of Knowledge exam.		Renewables; Solar		College Program		Sac City College	Sacramento	\$20/unit	Fall 2011		<a href="http://www.losrios.edu/downloads/GreenForce-3-31-09.pdf">http://www.losrios.edu/downloads/GreenForce-3-31-09.pdf</a>
ESS 32 PHOTOVOLTAICS DESIGN AND INSTALLATION	Introduction to photovoltaic concepts, applications, and the solar energy industry. Includes basics of electricity, load estimation, energy efficiency, solar site surveying, photovoltaic system components, sizing, financial analysis, design, installation, and maintenance. This course taken with ESS 32 prepares students to sit for the NABCEP PV Entry Level Certificate of Knowledge exam.		Solar		College Course	4 units	Sierra College	Rocklin	\$20/unit	Fall 2009		<a href="http://www.sierraenergytech.com">www.sierraenergytech.com</a>
ESS 30 FUNDAMENTALS OF PHOTOVOLTAICS			Solar		College Course	4 units	Sierra College	Rocklin	\$20/unit	Fall 2009		<a href="http://www.sierraenergytech.com">www.sierraenergytech.com</a>
Green - Fundamentals of Sustainable Buildings	A thorough introduction to green design practices, benefits, new green building ideas, and an overview of the architectural decisions and their impact on sustainable and green project goals. Course length: Approximately 35 hours		Building Envelope; Building Performance	Designed for: Recent engineering graduates working in HVACR; Engineers entering HVACR from another area ; Technicians ; Architects	Internet Course		Yuba College Community Education Internet	Internet	\$745	Yes		<a href="http://www.theknowledgebase.org/yccdcommmed/csdet.php">http://www.theknowledgebase.org/yccdcommmed/csdet.php</a>
Green Building for Contractors	Green Building for Contractors track: To become Green Builder certified, each enrolled user must complete the first seven courses listed below. Each study course in this curriculum addresses the fundamental principles of green building relating to energy efficiency, building durability, indoor air quality, resource efficiency, and water efficiency.  Completion of the course work includes passing the test associated with each course. Users who pass all tests will be eligible to receive a Green Builder Certificate.		Energy Basics; Building performance	Contractors	Internet Course		Yuba College Community Education Internet	Internet	\$725	Yes		<a href="http://www.theknowledgebase.org/yccdcommmed/csdet.php">http://www.theknowledgebase.org/yccdcommmed/csdet.php</a>

Our online sustainability training is a leading edge form of education that enables anyone around the world to learn about sustainability and "green" topics anytime - anywhere 24/7. People like you need information about sustainability to practice green living, remain current in the workplace, or meet the needs of your customers. Companies like yours need information about being sustainable to practice social responsibility, remain competitive, or meet the needs of global markets.

Are you a professional seeking to make yourself more competitive or trying to create a new career opportunity for yourself in today's job market? Now you can conveniently get the training you need for yourself, your team, or your entire company--and you don't have to blow your budget or change your schedule.

In Partnership with Green Supply Chain.org, the SCSP certification program is designed to give our graduates a comprehensive knowledge of sustainability across multiple functional areas along with a balance of internal and external knowledge of sustainability leadership and consultancy.

**10 Courses Included in this Program:**

Green Purchasing Fundamentals  
Sustainability 101: Corporate Social Responsibility Essentials  
Carbon Strategies  
Sustainability Leader: Your First 180-days to Success  
Green Transportation: 12 Best Practices  
Green Marketing & Sales Force Essentials  
Green Packaging

Green - Senior Certified Sustainability Professional Certificate - Online	<p>The Sustainability Consultant</p> <p>Advanced Green Purchasing</p> <p>Environmental Accounting 101</p> <p>Properly designed ventilation systems are essential for the well-being of building occupants, to minimize adverse health effects and improve productivity of workers and students. Standard 62.1, Ventilation and Acceptable Indoor Air Quality, is the industry standard for the design and operation of ventilation systems to provide acceptable indoor air quality.</p>
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This course is a practical guide to applying the standard's ventilation rates and demonstrates the regulatory application to new buildings, and additions and changes to existing buildings.

Green - Indoor Air Quality Fundamentals of Standard 62.1

It demonstrates the interaction of ventilation with heating and air-conditioning systems and how various parts of a building affect indoor air quality. This understanding will help you design, construct, operate and maintain buildings with acceptable indoor air quality.

Course Length: 29 hours

The LEED (Leadership in Energy and Environmental Design) Green Building Rating System™ is a voluntary, consensus-based national standard for developing high performance, sustainable buildings. "Building green" can have environmental, economic, and health and safety benefits. LEED accreditation can be a powerful marketing and business development tool for all professionals in the building industry. This 7-hour intensive online course is for professionals looking to learn about LEED and take the LEED Accredited Professional Exam. The course will cover the six categories of the LEED for New Construction 2.2 rating system, from Sustainable Sites to Innovation and Design Processes. Participants will receive training on the integrated project management and documentation processes that are fundamental to the LEED program and will learn tips for working as LEED Accredited Professionals in the field. The training series will conclude with an overview of recommended study methods, exam-taking skills and practice questions for the LEED for New Construction v2.2 accreditation exam.

Green - LEED for New Construction v2.2 Exam Prep - Online

By completing this course, taking practice tests, and studying the reference guide, you will be prepared to take the LEED exam. Not only will you learn what to study, you will learn why you need to know the material in order to work on LEED projects.

This course is a US Green Building Council Approved Education Provider Program and provides a firm foundation for LEED™. Standard 90.1 for Architects is a concise online course to help architects understand, apply and comply with the standard. It provides the information essential to architects, with a brief overview of engineering that avoids the complex details. ANSI/ASHRAE/IESNA Standard 90.1-2004 is the minimum energy efficiency standard for all non-residential buildings, and all residential buildings greater than three stories in height in the USA.

**Curriculum:**

- Fundamentals of ASHRAE Standard 90.1 (Energy Efficient Design)

- Advanced Energy Design – Small Retail Buildings

- Advanced Energy Design – Small Offices

Green - Energy-Efficient Design for Architects · Advanced Energy Design – Small Offices

Green Sustainability - Green Purchasing Fundamentals - Online	Organizational purchasing has evolved tremendously over the last decade shifting from an administrative function to a strategic role. The changing dynamics of the global economy altered the skills of procurement professionals amplifying the importance of conditions such as quality, cost, and delivery. Now, the next step in professional evolution is upon us and the functions of on-time delivery and the lowest price are no longer sufficient. Organizational purchasing is in a strategic position to influence the sustainability and carbon footprint of an organization through multiple channels. What are world class purchasing departments doing to help their organizations become more sustainable? Green Purchasing Fundamentals introduces foundational concepts that align with systems, policies, and procedures that support green purchasing practices and organization sustainability. ----- 10 Hours/6 week course	Material Selection		Internet Course	Yuba College Community Education Online	Internet	\$349	Yes	<a href="http://www.theknowledgebase.org/yccdcommenced/csdet.php">http://www.theknowledgebase.org/yccdcommenced/csdet.php</a>	
Certified Sustainability Professional Certificate	Our CSP certification program is designed to give our graduates a great balance of core sustainability topics to enable them to stand out individually or to step into a sustainability leadership role with confidence. Our online sustainability training is a leading edge form of education that enables anyone around the world to learn about sustainability and "green" topics anytime - anywhere 24/7. People like you need information about sustainability to practice green living, remain current in the workplace, or meet the needs of your customers. Companies like yours need information about being sustainable to practice social responsibility, remain competitive, or meet the needs of global markets. Are you a professional seeking to make yourself more competitive or trying to create a new career opportunity for yourself in today's job market? Now you can conveniently get the training you need for yourself, your team, or your entire company--and you don't have to blow your budget or change your schedule. ----- 50 hours/6 months access. ----- Instructor-led.	Energy Basics		Internet Course	Yuba College Community Education Online	Internet	\$1,299	Yes	<a href="http://www.theknowledgebase.org/yccdcommenced/csdet.php">http://www.theknowledgebase.org/yccdcommenced/csdet.php</a>	
Green Supply Chain Professional (GSCP) - Online	Our GSCP certification program is designed to give our graduates a comprehensive knowledge of the sustainability areas confronting supply chain and operations professionals. This program will provide the graduate with very unique credentials and experience. Our online sustainability training is a leading edge form of education that enables anyone around the world to learn about sustainability and "green" topics anytime - anywhere 24/7. People like you need information about sustainability to practice green living, remain current in the workplace, or meet the needs of your customers. Companies like yours need information about being sustainable to practice social responsibility, remain competitive, or meet the needs of global markets. Are you a professional seeking to make yourself more competitive or trying to create a new career opportunity for yourself in today's job market? Now you can conveniently get the training you need for yourself, your team, or your entire company--and you don't have to blow your budget or change your schedule. ----- 50 hours/6 months access. ----- Instructor led.	Material Selection		Internet Course	Yuba College Community Education Online	Internet	\$1,499	Yes	<a href="http://www.theknowledgebase.org/yccdcommenced/csdet.php">http://www.theknowledgebase.org/yccdcommenced/csdet.php</a>	
Green - Energy Auditing Software Training	Students learn to calculate and complete a heat load; and Audit short-cuts for quick load calculations; and techniques for using the software as a sales tool. Students, working with an instructor, will have the opportunity to take building specifications and complete a load calculation on several rooms using the software. This will help students not only how to complete a heat load, but also the information they need to prepare an accurate heat load. ----- Included: - Energy Audit Software CD-ROM - Unlimited expert training support but only requires between 2 to 3 hours. -----	Audits; Software		Internet Course	Yuba College Community Education Online	Internet	\$695	Yes	<a href="http://www.theknowledgebase.org/yccdcommenced/csdet.php">http://www.theknowledgebase.org/yccdcommenced/csdet.php</a>	
Green Sustainability - Sustainability 101 - Online	Sustainability has been described as "Meeting our needs while not compromising the ability of future generations to meet their needs" (Brundtland Commission) or "Not cheating our children" (former United Kingdom Environment Minister John Gummer). Sustainability resides within three foundational pillars of society: economic, social, and environment. Environmental sustainability and CSR are agenda items in boardrooms around the world not only as corporate stewardship discussion points, but as a strategic imperative and requirement so be successful. Leading organizations are taking a proactive position on transparency in reporting, auditing supply chain partnerships, innovating through community partnerships, and reacting to consumer demands. Our Sustainability 101 & CSR Essentials course establishes a common framework for employees at various levels and roles of the organization, while bringing together a global set of lenses to look through. It's easy for people in organizations to move in the same direction when everyone understands the same need and information. This course is essential for everyone in the organization. ----- 10 Hours/6 week course ----- Instructor Supported	Climate and Environment		Internet Course	Yuba College Community Education Online	Internet	\$299	Yes	<a href="http://www.theknowledgebase.org/yccdcommenced/csdet.php">http://www.theknowledgebase.org/yccdcommenced/csdet.php</a>	
Green Training - Certified Microbial Investigator (CMI) - Online	Take your HVAC or mold inspection services to a new level by learning the latest advances in the industry and while you're at it, getting the industry's most recognized microbial certifications, Council-certified Microbial Investigator (CMI) and Council-certified Microbial Consultant (CMC). We'll teach you the core skills needed to perform impressive assessments that will set you apart from the competition. Certification exam through the American Indoor Air Quality Council. ----- 28 hours. 3 months access. ----- Instructor supported.	HVAC	Builders, Property Managers, Engineers, HVAC	Internet Course	Yuba College Community Education Online	Internet	\$800	Yes	<a href="http://www.theknowledgebase.org/yccdcommenced/csdet.php">http://www.theknowledgebase.org/yccdcommenced/csdet.php</a>	
Green Training - Home Energy Analyst (HERS) - Online	The Building Analyst and HERS Rater course is based upon a broad building science curriculum. It presents a solid scientific foundation upon which inspectors and auditors can build an accurate understanding of modern buildings. Each topic includes an overview of the technology, examples of typical installations and their defects, procedures for performing audits, and guidelines for analyzing potential retrofits. A balanced approach to building performance is presented here that addresses energy efficiency, building durability, and human health. The information presented here covers the topic areas included in the BPI Building Certification Model, the RESNET Home Energy Rating Standards, and the WAP Core Competencies. Students who complete the course will possess the skills needed to sit for the BPI and RESNET exams. -----50 hours/7 weeks. -----Instructor led. ----- Next Start Dates ----- Jun 5 - July 31; Aug 7 - Oct. 2; Dec 4 - Jan 28 '10 ----- Cut off for enrollment is One week prior to start	Audits	Building Analysts	Residential	Internet Course	Yuba College Community Education Online	Internet	\$695	Yes	<a href="http://www.theknowledgebase.org/yccdcommenced/csdet.php">http://www.theknowledgebase.org/yccdcommenced/csdet.php</a>



Green Training - Certified Indoor Air Quality Manager (CIAQM) - Online	The Certified Indoor Air Quality Manager (CIAQM) course is comprehensive in its scope, covering concepts in IAQ management, preventative maintenance, microbiology, chemistry, building science, physics, engineering, construction, medicine and law. The course gives you practical steps to establish an IAQ Management Plan for your facility that will help you collect, log and resolve air quality complaints. The course also prepares you for the only accredited certification specifically designed for those that manage indoor air quality problems, sponsored by the American IAQ Council. -----" 28 hours. 3 months access. ----- Instructor supported.	Building Performance	Builders, Property Managers, Engineers, HVAC	Internet Course	Yuba College Community Education Online	Internet	\$800	Yes	<a href="http://www.theknowledgebbase.org/yccdcmmmed/csdet.php">http://www.theknowledgebbase.org/yccdcmmmed/csdet.php</a>
Green Training - Certified Indoor Environmentalist (CE) - Online	The Certified Indoor Environmentalist Course Online is an in depth program teaching you the core skills needed to perform indoor environmental assessments of all building types. The course not only provides the fundamentals of indoor air quality, it teaches more advanced topics that will educate even seasoned veterans in the field. Certification exam offered through the American Indoor Air Quality Council. -----32 hours. 3-months access	Building Performance	Builders, Property Managers, Engineers, HVAC	Internet Course	Yuba College Community Education Online	Internet	\$1,000	Yes	<a href="http://www.theknowledgebbase.org/yccdcmmmed/csdet.php">http://www.theknowledgebbase.org/yccdcmmmed/csdet.php</a>
Green Training - Weatherization Energy Auditor-Online	This course is tailored specifically for Department of Energy's (DOE) Weatherization Program and similar utility-funded programs. This course is based on the "Core Competencies for the Weatherization Assistance Program" developed by the Weatherization Trainers Consortium. The curriculum elements are specifically designed to train technicians involved in the field of building performance and energy efficiency by offering distance learning courses that are suited for continuing education, test preparation, and career enhancement. The course is also compliant with the BPI Energy Analyst Standards. -----50 hours/7 weeks. ----- Instructor led. ----- Next Start Dates ---- Jun 5 - July 31; Aug 7 - Oct. 2; Dec 4 - Jan 28 '10 ----- Cut off for enrollment is One week prior to start This course provide you with the knowledge and skills they need to run a more energy efficient and safe building. Introductory course that covers topics such as; Building Science, Building Shell, Heating and Cooling, Energy Usage and Energy Auditing. -----curriculum:----- Week 1 Building Science Introduction Video How Heat Flows Radiant Heat Transfer Power and Energy Introduction Review of Useful Math (Level 1) Latent and Sensible Heat Intro CHEC Heat Transfer Introduction Air Pressure and Flow Introduction Power and Energy Basics----- Week 2 The Building Shell----- Video How Insulation Works Air Movement through Homes Defining the Thermal Boundary----- CHEC Identifying Insulation Materials Construction Basics----- Week 3 Heating and Cooling Video Heating System Basics Cooling System Basics CHEC Furnace Identification Boilers and Hydronic Systems----- Week 4 Baseload Energy Usage----- Video Lighting Opportunities Evaluating Clothes Dryers CHEC Water Heating Energy Options Refrigerator Energy Use Lesson Find Refrigerator Use on Internet----- Week 5 Energy Auditing----- Video Communicating with Customers Energy Auditing: On the Job Energy Bill Analysis CHEC Level 1 Energy Auditing Customer Education Energy Bill Analysis----- Required materials----- Residential Energy provides much of the background in building science you'll need to understand the principles presented. The Saturn Building Analyst Field Guide describes the procedures used	Building Performance	The curriculum elements are specifically designed to train technicians involved in the field of building performance and energy efficiency	Internet Course	Yuba College Community Education Online	Internet	\$695	Yes	<a href="http://www.theknowledgebbase.org/yccdcmmmed/csdet.php">http://www.theknowledgebbase.org/yccdcmmmed/csdet.php</a>
Green Training - Intro to Building Energy Efficiency - Online	This course provides an overview of the World Resources Institute (WRI) Greenhouse Gas Protocol Initiative and describes various components of a climate-related strategy. It will summarize the critical steps for the firm to develop a successful carbon strategy across its boundaries, which includes assessing emissions and exposure to climate related risks, evaluating action options, setting goals and targets, developing financial mechanisms, engaging the organization, formulating policy strategy, and managing external relationships. ----- 10 Hours/6 week course ----- Instructor Supported ----- This course provides you the tools needed to determine a Green Project. Discover what the future may hold for a Green Lifestyle. This track is designed specifically for those individuals who are involved in the nuts and bolts of green building. Engineers, architects, builders, and those that would like to have a more in-depth approach to green building.	Energy Basics; Building Performance		Internet Course	Yuba College Community Education Online	Internet	\$395	Yes	<a href="http://www.theknowledgebbase.org/yccdcmmmed/csdet.php">http://www.theknowledgebbase.org/yccdcmmmed/csdet.php</a>
Green Sustainability - Carbon Strategies - Online		Climate and Environment		Internet Course	Yuba College Community Education Online	Internet	\$399	Yes	<a href="http://www.theknowledgebbase.org/yccdcmmmed/csdet.php">http://www.theknowledgebbase.org/yccdcmmmed/csdet.php</a>
Green Building Technical Professional		Energy Basics	Engoneers, architects, builders	Internet Course	Yuba College Community Education Online	Internet	\$395	Yes	<a href="http://www.theknowledgebbase.org/yccdcmmmed/csdet.php">http://www.theknowledgebbase.org/yccdcmmmed/csdet.php</a>
Green Building Sales Professional - Online	This course will teach you how to sell and market a green home! Determine what green features and benefits make the most sense, save the most money and save natural resources! Learn how new and exciting marketing techniques work! This track is designed specifically with at slant to selling products within a green home or selling a green certified home.	Energy Basics		Internet Course	Yuba College Community Education Online	Internet	\$395	Yes	<a href="http://www.theknowledgebbase.org/yccdcmmmed/csdet.php">http://www.theknowledgebbase.org/yccdcmmmed/csdet.php</a>
Green Training - Fundamentals of Solar Hot Water Heating - Online	This online course concentrates on the basics of installing code compliant solar hot water systems. This course will be useful for people who currently work in or plan to be employed in the solar hot water industry. Student technicians will learn practical design criteria, installation guidelines, safety issues, maintenance, and legal considerations of solar hot water heating systems. This Renewable Energy Technician course is designed to follow the Task Analyses developed by commitees of subject matter experts and adopted by North American Board of Energy Practictioners and in accordance with Interstate Renewable Energy Council----- 60 hours/3 months. Instructor-led. ----- Next Start Dates -----April 6th – Jun 15th ; Jun 15th – Aug 24th ; Sept 7th – Nov 16th ----- Cut off for enrollment is One week prior to start -----	Solar	This course will be useful for people who currently work in or plan to be employed in the solar hot water industry.	Internet Course	Yuba College Community Education Online	Internet	\$695	Yes	<a href="http://www.theknowledgebbase.org/yccdcmmmed/csdet.php">http://www.theknowledgebbase.org/yccdcmmmed/csdet.php</a>
Green Training - Photovoltaic System Design & Installation - Online	This online course will provide the student technician with the fundamental knowledge of photovoltaic system design and installation. This course will be suitable for a supervised, entry level position with a dealer/installer or other photovoltaic industry company. Student technicians will learn the practical design criteria, installation guidelines, safety issues, maintenance, and legal considerations of photovoltaic systems. This Renewable Energy Technician course is designed to follow the Task Analyses developed by commitees of subject matter experts and adopted by North American Board of Energy Practictioners and in accordance with Interstate Renewable Energy Council. ---- 85 hours/4 months. Instructor- led. ----- Next Start Dates ----- April 6th – July 20th ; Jun 15th – Sept 28th ; Sept 7th – Dec 21st ----- Cut off for enrollment is One week prior to start	Solar	This course will be suitable for a supervised, entry level position with a dealer/installer or other photovoltaic industry company.	Internet Course	Yuba College Community Education Online	Internet	\$795	Yes	<a href="http://www.theknowledgebbase.org/yccdcmmmed/csdet.php">http://www.theknowledgebbase.org/yccdcmmmed/csdet.php</a>

Green - Alternative Energy Operations	Topics include: Power Generation, Turbine System and Control, Combustion Turbine Fundamentals, Combustion Air and Flue Gas System, Boiler Fuel Systems, Efficiency, Reliability and Environmentally Sensitive Operations, Hydroelectric Power Plant Operations. Courses are developed by subject matter experts with field and educational experience within each discipline. All lessons are designed using learning outcome based instructional design methods. These online courses incorporate varying types of media, including photographs, graphics, video, animations, and three dimensional representations. Interactive remediation and simulation is also developed for each lesson to maximize the learning experience. ----- 108 hrs/12 months access ---- Self Paced	Renewables	Internet Course	Yuba College Community Education Online	Internet	\$455	Yes	<a href="http://www.theknowledgebase.org/yccdcommmed/csdet.php">http://www.theknowledgebase.org/yccdcommmed/csdet.php</a>
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Certificate/Degree or Course Title	Sample Courses/Course Description	Program	Topic Area(s)	Target Audience	Market Sector (if applicable)	Type (Seminar, Certification, College Class, etc.)	Course Units and Type, if applicable	Offered By	Location	Cost	Available Now? If no, list start date:	Website, and/or additional info
Northern California Valley Sheet Metal Workers' Heating & Air Conditioning Training Center	This facility offers a variety of classes for apprentices and journeymen in sheet metal and heating/air conditioning. The areas of focus in energy efficiency and "green" training include: Proper duct sizing, installation and sealing (very important!); Proper sizing of equipment for the structure ( proper heat load calculation); High efficiency equipment training; Performance testing of the installations; Retrofits for energy efficiency; Indoor Air Quality requirements; Energy management systems and operation; Buildings as a complete system (not individual components); Proper building construction to reduce energy usage (well sealed, insulated and livable); New and emerging technologies to improve equipment efficiency; Certification programs for our Service and TABB technicians	Sheet metal HVAC	Proper duct sizing, installation and sealing (very important!); Proper sizing of equipment for the structure ( proper heat load calculation); High efficiency equipment training; Performance testing of the installations; Retrofits for energy efficiency; Indoor Air Quality requirements; Energy management systems and operation; Buildings as a complete system (not individual components); Proper building construction to reduce energy usage (well sealed, insulated and livable); New and emerging technologies to improve equipment efficiency; Certification programs for our Service and TABB technicians	Sheet metal workers/HVAC installers	Commercial	Courses; hands on; certification	Credit available through ARC	Sacramento Valley Sheet Metal Workers	Sacramento Valley Sheet Metal Workers Training Center	Varies	Yes	<a href="http://sheetmetaltraining.com/courses.htm">http://sheetmetaltraining.com/courses.htm</a>
LEED in Construction	This program is aimed at giving participants insight into what the “New Green Economy” entails and what contractors can do to succeed.		Energy Literacy	Management , Project Managers, Estimators, Foremen	Commercial	Workshop	N/A	Sheet Metal and Air Conditioning Contractors' National Association	Online	\$95	Yes	<a href="http://smacna.bccconf.com/store/provider/provider09.php?sessionid=6a1845d58e8c167a3723b2d46e8fb2dc-15426748">http://smacna.bccconf.com/store/provider/provider09.php?sessionid=6a1845d58e8c167a3723b2d46e8fb2dc-15426748</a>

Plumbers & Pipefitters Training Center for UA Local #447	The Plumbers, Pipefitters, Air Conditioning and Refrigeration Program is a 5 year Apprenticeship Program, with on-the-job training and related experiences.	HVAC		Courses; hands on; certification	Plumbers & Pipefitters UA Local #447	Plumbers & Pipefitters Training Center for UA Local #447	Varies	Yes	<a href="http://www.apmcsacramento.com/page/page/2613124.htm">http://www.apmcsacramento.com/page/page/2613124.htm</a>
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IBEW Sacramento Training Center	The Sacramento Electrical Training Center provides electrician apprenticeships and continuing education for the organized electrical industry. Its mission is to turn out the best trained professional electricians ready to meet the electrical workload need of the Sacramento area.	Electrical	The training programs at IBEW are intended to train/retrain dislocated union workers and expand their knowledge base and skill sets in "green" areas.	Courses hands on; certification	Credit available through ARC	Sacramento (IBEW) Training Center	Varies	Yes	<a href="http://www.340jatc.org/curriculum.asp">http://www.340jatc.org/curriculum.asp</a>
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Certificate/Degree or Course Title	Sample Courses/Course Description	Program	Topic Area(s)	Target Audience	Market Sector (if applicable)	Type (Seminar, Certification, College Class, etc.)	Course Units and Type, if applicable	Offered By	Location	Cost	Available Now? If no, list start date:	Website, and/or additional info
Wind Energy for Technicians: A Technology & Industry Primer	Given over two full days, Wind Energy for Technicians provides a comprehensive, technical foundation for those currently working or considering future work in the wind industry. Instead of replacing or duplicating on-the-job training, this course augments it by focusing on core fundamentals that traditionally aren't covered, including aerodynamics, structural loads, and the engineering of power electronics and control systems. Topics such as grid integration of wind energy, environmental issues, and design of modern wind turbines will also be discussed. We believe that understanding these fundamental topics makes better technicians who are more aware in their working environment and more invested in their industry.		Wind energy	Basic prior knowledge of the wind industry or with wind turbines and electrical systems is assumed. However, this course is also appropriate for anyone seeking a better understanding of wind energy.		Workshop		California Wind Energy Collaborative	UC Davis	\$300	Yes	<a href="http://cwec.ucdavis.edu/training/">http://cwec.ucdavis.edu/training/</a>
Small Wind Energy Systems	The California Wind Energy Collaborative is committed to spreading practical knowledge about these systems to the public. We are offering a one day course to teach people about small wind systems and what it takes to make the wind work for you. We have installed a Bergey XL.1 small wind turbine here on the UC Davis campus. This installation will facilitate learning both on and off campus through CWEC's education programs.		Wind energy	This course is also appropriate for anyone seeking a better understanding of wind energy.		Workshop		California Wind Energy Collaborative	UC Davis	Unknown	In developn	<a href="http://cwec.ucdavis.edu/smallwind/">http://cwec.ucdavis.edu/smallwind/</a>
Green Business Operations Certificate Program	Green Best Practices; Green Facilities; Green Purchasing; Green ROI; Greening Your Business Operations; Leading Green Change	Extension Certificate		This program is appropriate for private and public sector professionals wanting to understand the impact of "green responsibility" on their business and how to cost-effectively address key issues and impacts.	Commercial	College Class; certification	10.8 CEUs	Sacramento State	Main campus	\$383/course	Yes	<a href="http://www.cce.csus.edu/catalog/course_group_detail.asp?group_number=344&amp;group_version=1">http://www.cce.csus.edu/catalog/course_group_detail.asp?group_number=344&amp;group_version=1</a>
Sacramento State Smart Grid Center/College of Engineering and Computer Science	Students may receive a BS or MS in Electronic and Electrical Engineering with an emphasis in Power Engineering. Classes offered include: Energy Systems Control and Optimization, Electric Power Distribution, Renewable Electrical Energy Sources and Grid Integration, Electromechanical Laboratory, Smart Electric Power Grid, Power System Laboratory, Introduction to Future Power and Systems and Smart Grids. Students may also take classes related to network security and power grid vulnerability. This is one of two "smart grid" programs in the state.			The Smart Grid Center at Sacramento State engages in product testing of automated metering infrastructure and develops practical field solutions for large-scale integration of Smart Grid technologies. The Center aims to inform the development of real-time pricing of electricity by providing an unbiased proving ground where utilities, industry and the public sector will work together to impact consumer choice, global climate change and energy security. In addition, the Center works directly with California and national utilities to support the development of the highly desired upgrades to the nation's electric grid.		College Class	Varies	Sacramento State	Main campus	Varies	Yes	<a href="http://athena.ecs.csus.edu/CASmartGrid/index.php">http://athena.ecs.csus.edu/CASmartGrid/index.php</a>
Wastewater Treatment Plant Operation Specialist Certificate Program	The wastewater treatment plant operation specialist certificate program prepares students with the knowledge, skills, and abilities to competently work in the wastewater treatment industry and the technical, scientific, and application background to obtain licensure. Specific objectives of the proposed certificate program are to provide students with the skills and knowledge to: effectively and safely operate and maintain wastewater treatment plants; protect public health and the natural environment by producing high quality, clean, safe treated water for discharge to the environment or for reuse; effectively and safely operate facilities to process wastewater residuals for reuse and to recover energy from the residuals; prevent public health hazards from water-borne pathogens; manage receiving water watershed environmental quality; effectively monitor wastewater treatment processes using sampling and laboratory	Extension Certificate	Water treatment	The program targets prospective wastewater treatment plant operators seeking to begin a career in the wastewater treatment industry and experienced operators who want to advance in their careers to levels with higher responsibilities and rewards.		College class; certification	18 units	Sacramento State	Main campus	\$690/course	Yes	<a href="http://www.cce.csus.edu/catalog/course_group_detail.asp?group_number=353&amp;group_version=1">http://www.cce.csus.edu/catalog/course_group_detail.asp?group_number=353&amp;group_version=1</a>

Sustainable Facility Management Certificate Program	The purpose of sustainable facilities management is to reduce the embodied carbon within the design, construction and operation of facilities. It is not simply an overlay on legacy facilities management. Sustainable facilities management requires a new design and a new operational paradigm for facilities.	Extension Certificate	Introduction to Sustainable Facilities Management; Standards and Framework for Operational Efficiencies; Sustainable Planning, Designing, and Constructing the Green Building; Sustainable Real Estate and Lease Management; Sustainable Building Maintenance and Repair; Sustainable Building Operations and Energy Management; Sustainable Space Planning and Space Utilization.	The Sustainable Facilities Management Certificate Program is directed to the following individuals: Professionals wishing to upgrade their knowledge and skills; facility managers; administrative services managers; property managers.	Commercial; public.	Certificate	12 CEUs	Sacramento State	Main campus	\$584/course	Fall 2009	<a href="http://www.cce.csus.edu/green">www.cce.csus.edu/green</a>
Green Business Operations Certificate Program	Environmental issues have moved into the mainstream of our culture. These issues have created a demand for a deeper understanding of the problems and potential solutions to preserving our environment at the individual and business levels. Both public and private entities are setting goals and objectives in the areas of energy use, sustainable design and environmentally responsible operations of their sites and buildings. The challenges of creating and managing a green business require new skills, knowledge and methods of analysis.	Extension Certificate	Green Best Practices; Green Facilities; Green Purchasing; Green ROI; Greening Your Business Operations; Leading Green Change	This program is appropriate for private and public sector professionals wanting to understand the impact of "green responsibility" on their business and how to cost-effectively address key issues and impacts.	Commercial; public.	Certificate	10.8 CEUs	Sacramento State	Main campus	\$383/course	Yes	<a href="http://www.cce.csus.edu/green">www.cce.csus.edu/green</a>
Sustainable Supply Chain Certificate Program	This certificate program is designed to provide participants with sustainable supply chain and logistics skills and tools in order for them to become change agents and problem solvers within their organizations. Moreover, participants will be prepared to manage the challenges of transforming traditional supply chains into more evolved sustainable ecosystems.	Extension Certificate	Introduction to Sustainable Supply Chain Management; Sustainable Procurement; Manufacturing and Services in the Global Ecosystems; Sustainable Delivery, Storage, Returns, and Inventory Management; Technology Enabled Sustainable Supply Chain; Sustainable Energy and Waste Management; Implementing a Lean, Green Sustainable Supply Chain; Practical and Tactical Sustainability.	This program meets the needs of local professionals with business responsibilities related to a supply chain. Since supply chains touch every aspect of an enterprise, several positions within Logistics, IT, Procurement, Planning, Logistics, Warehousing, Inventory Management, Production, Engineering, Human Resources and more would benefit.	Commercial; public.	Certificate	7.2 CEUs	Sacramento State	Main campus	\$404/course	Fall 2009	<a href="http://www.cce.csus.edu/green">www.cce.csus.edu/green</a>
Sustainable Event and Corporate Meeting Professional Certificate Program	Any event can be sustainable. Planners look at the standard tasks of site selection, publicity, invitations and registration, food service and logistics, through new eyes and know that 'going green' can give a competitive edge, build a great reputation, and save time and money.	Extension Certificate	TBD	Event planners, hospitality professionals, hotel staff, restaurant owners and operators	Commercial; public.	Certificate	TBD	Sacramento State	Main campus	TBD	Fall 2009	<a href="http://www.cce.csus.edu/green">www.cce.csus.edu/green</a>
Waste Reduction	In order to create a more sustainable world, we need to reduce our waste. Learn about how to sell your waste or how to buy others' waste. Learn about the best practice in 'closing-the-loop' and eliminating the concept of waste.	Extension Certificate		Building and business owners and operators	Commercial; public.	Course	.4 CEUs	Sacramento State	Main campus	\$89	Fall 2009	<a href="http://www.cce.csus.edu/green">www.cce.csus.edu/green</a>
Green Strategies for Small Business	Talk with experts about the tools you can put into place now to start saving money, run a more healthy business, and reduce impact on the environment.	Extension Certificate		Small business owners	Commercial; public.	Course	.4 CEUs	Sacramento State	Main campus	\$89	Fall 2009	<a href="http://www.cce.csus.edu/green">www.cce.csus.edu/green</a>
Energy Management	Review the major strategies in energy management strategies. Discussion will center on building operations; lighting and HVAC technologies; building automation and controls; managing demand; load shifting; utility rates; and time of use strategies.	Extension Certificate		Building and business owners and operators	Commercial; public.	Course	.4 CEUs	Sacramento State	Main campus	\$89	Fall 2009	<a href="http://www.cce.csus.edu/green">www.cce.csus.edu/green</a>
Marketing and Sustainability	Organizations adopting sustainable marketing practices focus on maximizing shareholder wealth while caring about the impact on the physical environment and society as a whole. This workshop will focus on the current issues, the forces of change within this area, and the influence that sustainable practices have on strategic marketing decisions.	Extension Certificate		Business owners, public relations, marketing, advertising, brand management professionals.	Commercial; public.	Course	.4 CEUs	Sacramento State	Main campus	\$89	Fall 2009	<a href="http://www.cce.csus.edu/green">www.cce.csus.edu/green</a>
Human Resources' Role in a Sustainable Enterorise	Case study-based discussion around holistic approaches and the human resource function. Tasks include: change management, developing metrics, system alignment, employee enaagement, and organizational learning. Discussion focuses on performance indicators; financial justification models; and the change management practices for a new sustainability strategy or improving an existing green strategy.	Extension Certificate		HR professionals, business owners, executives	Commercial; public.	Course	.4 CEUs	Sacramento State	Main campus	\$89	Fall 2009	<a href="http://www.cce.csus.edu/green">www.cce.csus.edu/green</a>
Sustainability Primer for Executives	The Institute of Transportation Studies at UC Davis (ITS-Davis) is a multi-faceted, internationally recognized program with more than 60 affiliated faculty and researchers, 80 graduate students, and a \$6 million annual budget. Its primary program components are research, education and outreach.	Extension Certificate		Business owners, senior-level executives ITS houses research centers for PHEV, FCVH and hydrogen vehicle technology ai adiottn to other sustainable transoprtation topics.	Commercial; public.	Course	.4 CEUs	Sacramento State	Main campus	\$89	Fall 2009	<a href="http://www.cce.csus.edu/green">www.cce.csus.edu/green</a>
Institute of Transportation Studies			Alternative Vehicle Technology			N/A		UC Davis			N/A	<a href="http://www.its.ucdavis.edu/research/vehicletechnologies/index.php">http://www.its.ucdavis.edu/research/vehicletechnologies/index.php</a>

California Biomass Collaborative	Welcome to the California Biomass Collaborative, a statewide collaboration of government, industry, environmental groups, and educational institutions administered for the state by the University of California, Davis. Sponsored by the California Energy Commission and other agency and industry partners, the Collaborative works to enhance the sustainable management and development of biomass in California for the production of renewable energy, biofuels, and products.	Biomass	The Collaborative realizes its mission through statewide coordination with government and industry; resource inventory and generation assessment; facility performance reporting and evaluations; technology research, development, demonstration, and deployment; the study of policy issues and implications; developing standards; research management; education and training; and extension and public outreach.	N/A	UC Davis	N/A	<a href="http://biomass.ucdavis.edu/">http://biomass.ucdavis.edu/</a>			
Energy Efficiency: Understanding the Other Side of the Meter	This foundational course presents the key concepts and methods of energy efficiency. It explores how energy is converted into useful services and the role of increased efficiency in providing those services with less energy. The different forms of efficiency improvements and conservation are introduced, drawing upon examples in transportation, buildings, and industry. The practical implications of public policies, behavior, and economics are interspersed with technical and theoretical aspects. Students measure energy use and undertake independent investigations.		Graduate level and upper division undergraduate students interested in energy issues in the developing world, including students in engineering, the social sciences, and graduate school of management.	College class	1 unit pass/fail or 3 units graded	UC Davis Energy Efficiency Center	Main campus	Unknown	Yes	<a href="http://eec1.ucdavis.edu/education/EEC-classes/summary">http://eec1.ucdavis.edu/education/EEC-classes/summary</a>
Overview of Energy & Development	This overview course is designed to educate and expose students to energy and energy technology issues specific to developing countries. The graduate level class will focus on schemes to disseminate new technologies and provide hands-on practical experience in designing and implementing sustainable energy solutions. Students will apply basic engineering, social science, and business skills to evaluate a prospective project/venture through guest lecturers, lab modules, and case studies.	Energy; energy technology	Graduate level and upper division undergraduate students interested in energy issues in the developing world, including students in engineering, the social sciences, and graduate school of management.	College class	1 unit pass/fail or 3 units graded	UC Davis Energy Efficiency Center	Main campus	Unknown	Yes	<a href="http://eec1.ucdavis.edu/education/EEC-classes/d-labi/overview">http://eec1.ucdavis.edu/education/EEC-classes/d-labi/overview</a>
The Economics of Energy Efficiency and Climate Change Mitigation	Future decisions to save energy or to mitigate climate change will be heavily based on the perceived costs and benefits of those actions. For that reason, it is important to understand the markets, the mechanisms, and decision-making processes behind the demand for energy. This course will explore factors that can accelerate (or derail) an energy-efficient, low-emissions future.	Energy; climate change	Graduate level and upper division undergraduate students interested in energy issues in the developing world, including students in engineering, the social sciences, and graduate school of management.	College class	1 unit pass/fail or 3 units graded	UC Davis Energy Efficiency Center	Main campus	Unknown	W 2010	<a href="http://eec1.ucdavis.edu/education/EEC-classes/summary">http://eec1.ucdavis.edu/education/EEC-classes/summary</a>
UD Davis Energy Graduate Group (EGG)	made a major commitment to "Energy for the Future" by advancing new energy initiatives and extending the frontiers of sustainable energy development. A critical component of this commitment is the delivery of broad educational coverage in energy that students demand and need. The campus is proposing to help meet this need by establishing a graduate group in energy that will bring together a cohesive faculty and comprehensive course of instruction better designed to meet the needs of a new generation of energy professionals. The objective of the Energy Graduate Group (EGG) is to provide an integrated program of graduate education in energy and related fields that will lead to M.S. and Ph.D. degrees in one of the two following areas: (1) Energy Science and Technology, and (2) Energy Policy and Management. Distinctive features of the program will be a focus on renewable energy systems and transportation fuels with general training in energy, leading to improved environmental and economic performance and sustainable design. It will be an integral part of the UC Davis Energy Institute. If approved, the graduate group will likely admit its first students in the fall of 2009.	Energy science and technology; Energy management	This program is pedning approval by the university and dose not currently have materials available for the general public.			UC Davis Energy Institute	Main campus	Unknown	FALL 2009 (approval pending)	<a href="http://energy.ucdavis.edu/home.cfm?id=ENR_28,1932">http://energy.ucdavis.edu/home.cfm?id=ENR_28,1932</a>
Bioenergy Systems Design (Green Building and Renewable Energy Certificate)	Gain an understanding of biomass technologies and characteristics, engineering bioenergy feedstocks, biochemical conversion, anaerobic digestions, thermochemical and physicochemical conversion, biomass production systems and feedstock logistics. Explore the environmental, economic and social impacts. Learn about emerging bioenergy technologies, legislation and regulations. Work in teams to design and site a bioenergy system for a commercial or agricultural application.	Extension Certificate	The program is designed for professionals who want to advance their knowledge and careers in the planning, design, engineering, renewable energy systems and construction disciplines, including: construction managers, first line supervisors, architects, architectural drafters, civil and mechanical engineers, interior designers, urban and regional planners, developers, builders and landscape architects.	College class; certification	2 quarter units	UC Davis Extension	TBD	TBD	Not currently scheduled	<a href="http://extension.ucdavis.edu/unit/green_building_and_sustainability/certificate/green_building_and_renewable_energy/#L35454">http://extension.ucdavis.edu/unit/green_building_and_sustainability/certificate/green_building_and_renewable_energy/#L35454</a>



Cogeneration and District Solutions (Green Building and Renewable Energy Certificate)	Gain an overview of micro-cogeneration and district energy solutions for commercial and district applications. Learn about cogeneration system selection and sizing, preliminary feasibility study approaches, heat to power ratios, computer programs, economic and environmental issues, emerging technologies and regulations. Explore the economics of micro-cogeneration life cycle assessment, breakeven analysis, incentive programs, heat and electricity supply scenarios, and interconnecting with your local utility. Examine environmental impacts such as co-products, impact assessments and pollutant emissions.	Extension Certificate	The program is designed for professionals who want to advance their knowledge and careers in the planning, design, engineering, renewable energy systems and construction disciplines, including: construction managers, first line supervisors, architects, architectural drafters, civil and mechanical engineers, interior designers, urban and regional planners, developers, builders and landscape architects.	College class; certification	1 quarter units	UC Davis Extension	Sacramento - Sutter Square Galleria	\$295	Yes	<a href="http://extension.ucdavis.edu/unit/engineering_and_technology/course/description/?type=A&amp;unit=ENG&amp;SectionID=147411&amp;prglist=ENG">http://extension.ucdavis.edu/unit/engineering_and_technology/course/description/?type=A&amp;unit=ENG&amp;SectionID=147411&amp;prglist=ENG</a>	
Energy Resource Management: Demand (Energy Resource Management Certificate)	Flip a switch and you increase energy's power trip. Rein in this power by learning how to conduct energy audits, a function in a conservation-conscious energy community. The audits integrate: energy economics, metering, performance contracting and financing with demand response, measurement, verification, equipment applications and systems. Discover the quantitative analysis of WAGES—water, air, gas, electricity and steam. Familiarize yourself with an overview of Leadership in Energy & Environmental Design—LEED. Amp up your knowledge of the latest lighting technologies and products; delve into: project management, fleet operation and maintenance, verification of energy savings and best practices and benchmarking. Explore optimization and analysis of performance for new and existing buildings. Walk away with real solutions to real-world energy problems.	Extension Certificate	Plant energy managers, utility energy auditors and analysts, consulting energy managers and engineers, demand side managers, architects, construction planners and designers	Commercial	College class; certification	3 quarter units	UC Davis Extension	Online	\$1,495	Yes	<a href="http://extension.ucdavis.edu/unit/business_and_management/course/description/?type=A&amp;unit=BM&amp;SectionID=147687&amp;prglist=ENF">http://extension.ucdavis.edu/unit/business_and_management/course/description/?type=A&amp;unit=BM&amp;SectionID=147687&amp;prglist=ENF</a>
Energy Resource Management: Environment (Energy Resource Management Certificate)	Explore the range of environmental issues affected by energy use. Gain perspectives on current trends and technologies and examine the environmental fundamentals--planning, development and implementation--of WAGES (water, air, gas, electricity and steam) systems as well as Renewable energy systems, Purchasing/trading carbon offsets, The Climatic Change Action Plan, Best practices and methodologies for financing "green" investments.	Extension Certificate	Plant energy managers, utility energy auditors and analysts, consulting energy managers and engineers, demand side managers, architects, construction planners and designers	Commercial	College class; certification	2 quarter units	UC Davis Extension	Online	Not currently scheduled		<a href="http://extension.ucdavis.edu/unit/business_and_management/certificate/energy_resource_management/index.asp#L34681">http://extension.ucdavis.edu/unit/business_and_management/certificate/energy_resource_management/index.asp#L34681</a>
Energy Resource Management: Leadership (Energy Resource Management Certificate)	Examine the leadership issues involved in managing energy from organizational behavior and change management to project management and communication skills. Gain insight into how to develop your own leadership style. Learn how to successfully move your organization ahead by creating effective strategies for energy management, including your most important asset—people.	Extension Certificate	Plant energy managers, utility energy auditors and analysts, consulting energy managers and engineers, demand side managers, architects, construction planners and designers	Commercial	College class; certification	3 quarter units	UC Davis Extension	Online	Not currently scheduled		<a href="http://extension.ucdavis.edu/unit/business_and_management/certificate/energy_resource_management/index.asp#L34681">http://extension.ucdavis.edu/unit/business_and_management/certificate/energy_resource_management/index.asp#L34681</a>
Energy Resource Management: Regulatory (Energy Resource Management Certificate)	Learn the difference between regulations and tariffs pertaining to electrical generation, transmission and distribution and those pertaining to gas production, transmission and distribution. You will also survey indoor air quality standards, rate structures and how to conduct a load study. Explore emerging state and federal regulations and codes, as well as codes and standards for commercial and industrial uses and applications.	Extension Certificate	Plant energy managers, utility energy auditors and analysts, consulting energy managers and engineers, demand side managers, architects, construction planners and designers	Commercial	College class; certification	3 quarter units	UC Davis Extension	Online	Not currently scheduled		<a href="http://extension.ucdavis.edu/unit/business_and_management/certificate/energy_resource_management/index.asp#L34681">http://extension.ucdavis.edu/unit/business_and_management/certificate/energy_resource_management/index.asp#L34681</a>
Energy Resource Management: Supply (Energy Resource Management Certificate)	Learn to conduct market assessments and to develop sourcing and procurement strategies. Topics include energy management control systems, natural gas purchasing opportunities in the spot market, thermal energy storage, alternative energy supplies, energy security and energy trading. Explore reliability and risk analysis methods, financing projects and tax considerations as well as strategic planning, cogeneration and the options, costs, benefits and constraints of "green sourcing."	Extension Certificate	Plant energy managers, utility energy auditors and analysts, consulting energy managers and engineers, demand side managers, architects, construction planners and designers	Commercial	College class; certification	3 quarter units	UC Davis Extension	Online	\$1,495	Yes	<a href="http://extension.ucdavis.edu/unit/business_and_management/course/description/?type=A&amp;unit=BM&amp;SectionID=147484&amp;prglist=ENF">http://extension.ucdavis.edu/unit/business_and_management/course/description/?type=A&amp;unit=BM&amp;SectionID=147484&amp;prglist=ENF</a>
Energy Sources, End Uses and Impacts (Green Building and Renewable Energy Certificate)	End uses—the breakdown of how energy is used in its final stage—is a crucial component of a successful sustainable environment. Conservation and the effectiveness of renewable energy sources like solar power, biomass, hydroelectric and photovoltaic are key elements to achieving energy efficiency. Examine the energy issue from the macro perspective of the built environment to the micro approach of how heat flows throughout a building. Using the "whole building" perspective, discover some of the natural and mechanical means of heating, cooling and ventilation for improved indoor air quality and cost savings. From solar panels and exterior shades to lighting a space and painting a roof white, learn how to analyze energy use as an effective strategy to promote energy conservation in the built environment.	Extension Certificate	The program is designed for professionals who want to advance their knowledge and careers in the planning, design, engineering, renewable energy systems and construction disciplines, including: construction managers, first line supervisors, architects, architectural drafters, civil and mechanical engineers, interior designers, urban and regional planners, developers, builders and landscape architects.	College class; certification	2 quarter units	UC Davis Extension	Sacramento - Sutter Square Galleria	\$525	Yes	<a href="http://extension.ucdavis.edu/unit/environmental_management/course/description/?type=A&amp;unit=ENV&amp;SectionID=145400&amp;prglist=NAT">http://extension.ucdavis.edu/unit/environmental_management/course/description/?type=A&amp;unit=ENV&amp;SectionID=145400&amp;prglist=NAT</a>	


Solar Energy Systems: Design and Code Overview (Green Building and Renewable Energy Certificate)	Sharpen your knowledge of solar energy systems by exploring the latest technologies, systems design requirements and implementations, and electrical code requirements for solar energy systems. Designed for individuals with a general understanding of solar energy systems, this course presents the current and future solar module, inverter and mounting technologies, as well as the California Solar Initiative program requirements. Using several actual design systems, review design requirements and installation issues for both residential and commercial solar energy systems. Focus on the areas of system sizing, array layout, electrical wiring and utility interconnection. Study the current electrical code requirements and inspection issues as they relate to the safety and quality of the overall system design.	Extension Certificate	Electricians, installers, engineers, architects, home owners, designers and those interested in obtaining a technical understanding of solar energy systems.	College class; certification	1.2 CEUs/2 quarter units	UC Davis Extension	Sacramento - Sutter Square Galleria	\$345	Yes	<a href="http://extension.ucdavis.edu/unit/environmental_management/course/description/?type=A&amp;unit=ENV&amp;SectionID=147476&amp;prglist=RNW">http://extension.ucdavis.edu/unit/environmental_management/course/description/?type=A&amp;unit=ENV&amp;SectionID=147476&amp;prglist=RNW</a>
Sustainability and the Built Environment (Green Building and Renewable Energy Certificate)	Receive an overview of sustainability, as it relates to the built environment-from the economic, environmental and social-equity development perspectives. Learn how researchers and analysts define sustainability, as well as how they measure and track progress. Study historical precursors of the current sustainability movement, and how this movement is translated into planning, engineering, architecture, landscape architecture, construction and other fields.	Extension Certificate	The program is designed for professionals who want to advance their knowledge and careers in the planning, design, engineering, renewable energy systems and construction disciplines, including: construction managers, first line supervisors, architects, architectural drafters, civil and mechanical engineers, interior designers, urban and regional planners, developers, builders and landscape architects.	College class; certification	2 quarter units	UC Davis Extension	TBD	TBD	Not currently scheduled	<a href="http://extension.ucdavis.edu/unit/green_building_and_sustainability/certificate/green_building_and_renewable_energy/#L33035">http://extension.ucdavis.edu/unit/green_building_and_sustainability/certificate/green_building_and_renewable_energy/#L33035</a>
Sustainable Planning, Environmental Site Design and Development (Green Building and Sustainable Design Certificate)	Learn about the planning and site design of sustainability. Topics include: land use planning; smart growth and urban design; transportation policy and design; environmental site design; site assessment and selection; brownfield redevelopment strategies and infill development	Extension Certificate	The program is designed for planners, architects, developers, contractors, landscape architects, interior designers and anyone interested in the implementation of sustainable building tools and strategies. It is also recommended for professionals moving into fields that require knowledge of green building or sustainable design.	College class; certification	2 quarter units	UC Davis Extension	TBD	TBD	Not currently scheduled	<a href="http://extension.ucdavis.edu/unit/green_building_and_sustainability/certificate/green_building_and_sustainable_design/#L33036">http://extension.ucdavis.edu/unit/green_building_and_sustainability/certificate/green_building_and_sustainable_design/#L33036</a>
Sustainable Water Resources Management in Site Design and Development (Green Building and Sustainable Design Certificate)	Learn how to incorporate a sustainable water resources approach into urban development at the planning, design and construction stages. Explore water use/demand, water conservation, water quality and wastewater treatment, use of recycled water and storm water drainage as they relate to the planning and design of urban communities and project sites. Learn to apply sustainability principles to natural or impacted sites, such as a creek, drainage ditch, culvert or wetland. Receive an introduction to fundamental water resources policy issues and hydrologic processes as they apply to community planning and design situations.	Extension Certificate	The program is designed for planners, architects, developers, contractors, landscape architects, interior designers and anyone interested in the implementation of sustainable building tools and strategies. It is also recommended for professionals moving into fields that require knowledge of green building or sustainable design.	College class; certification	2 quarter units	UC Davis Extension	TBD	TBD	Not currently scheduled	<a href="http://extension.ucdavis.edu/unit/green_building_and_sustainability/certificate/green_building_and_sustainable_design/#L33036">http://extension.ucdavis.edu/unit/green_building_and_sustainability/certificate/green_building_and_sustainable_design/#L33036</a>

Certificate/Degree or Course Title	Sample Courses/Course Description	Topic Area(s)	Target Audience	Market Sector (if applicable)	Type (Seminar, Certification, College Class, etc.)	Course Units and Type, if applicable	Offered By	Location	Cost	Available Now? If no, list start date:	Website, and/or additional info
GEO Environmental Science and Design Academy	Landscape Architecture (UC elective credit) AP Environmental Science Environmental Horticulture (UC elective credit) Health Science: Nutritious Cooking From the Garden	9th-12th grade students outdoor learning and hands-on experiences in environmental horticulture, landscape architectural design, habitat restoration, “green” business, and environmental science monitoring.	Youth		High School Diploma		Twin Rivers USD	Grant HS Main Campus	None	Yes	<a href="http://www.eatfromthegarden.org/">http://www.eatfromthegarden.org/</a>
Grid Alternatives Solar Affordable Housing Program	GRID Alternatives’ mission is to empower communities in need by providing renewable energy and energy efficiency services, equipment and training. Since 2001, GRID Alternatives has been working to bring the power of solar electricity and energy efficiency to low-income homeowners, and to provide community members with training and hands-on experience with renewable energy technologies. We believe making energy choices that are good for the environment can go hand-in-hand with improving the lives of those living in low-income communities.	Contractors and construction professionals interested in gaining hands on experience with solar installation frequently volunteer with Grid Alternatives. This is an informal training opportunity.	Youth; adults	GRID Alternatives has trained over 2,030 community volunteers and job trainees on the theory and practice of solar electric installation, and provided them with opportunities to gain hands-on experience with real-world solar installation projects. Our volunteers gain valuable skills and experience that they can bring back to their homes, businesses and communities, and help build broad-based, grassroots leadership and support for renewable energy.		None	Grid Alternatives	Bay Area	None		<a href="http://www.gridalternatives.org/">http://www.gridalternatives.org/</a>